THE
RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
The Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal ESTABLISHED 1835 · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: VICTORIA 8836 (6 lines)

Annual subscription payable in advance and postage free:
British Isles and Abroad.....£2 5s. 0d.
Single Copies.....One Shilling
Registered at the General Post Office, London, as a Newspaper

VOL. 63. No. 11 FRIDAY, SEPTEMBER 13, 1935

CONTENTS

	PAGE
Editorials	405
Letters to the Editor	410
Publications Received	411
The Scrap Heap	412
Overseas Railway Affairs	413
British Railway Statistics	415
International Railway Congress Association	416
Keeping Locomotive Boiler Tubes Clean	418
New Southampton Central Station, Southern Railway	419
New Kitson–Meyer Locomotives for South America	425
General Electric Sound Amplifiers at Euston, L.M.S.R.	425
Railway News Section	427
Personal	427
Contracts and Tenders	433
Legal and Official Notices	434
Railway Share Market	436

G.W.R. New Works

MR. FRANK R. POTTER, Principal Assistant to the Superintendent of the Line, Great Western Railway, in the course of an address on September 6 to the Plymouth Rotary Club, said the Great Western Railway Company was endeavouring to obtain financial assistance from the Treasury to carry out a number of important new works on all parts of the system which would, of course, have a beneficial effect on employment and trade. He briefly described some of the new works in the West of England which were now being investigated and might in due course be submitted to the directors for their approval. Subject to financial assistance being obtained from the Treasury, the first to be put in hand would be at North Road, Plymouth, where about £200,000 would be spent in building a new station worthy of the city. This project, it will be remembered, was discussed by the Chairman, Sir Robert Horne, in his speech at Plymouth on January 30 last. Other schemes for which plans were being prepared were a new station at Penzance, a new branch line from St. German's to Looe, and an avoiding line between Exeter and Newton Abbot. Another important scheme under consideration, subject to the agreement of the Southern Railway Company, was the remodelling of Exeter station. The essential feature of this project was a "fly-over" from the west end of the Southern Railway's tunnel across the present site of the Great Western Railway's goods shed to join the Southern's own line (to Ilfracombe, Plymouth, and North Cornwall) beyond Cowley junction. This scheme would obviate the trains of one system waiting in St. David's station (G.W.R.) for those of the other, and would avoid holding up the traffic at Exeter Central (S.R.), which unfortunately occurred occasionally during the height of the holiday seasons.

* * * *

The Problem of the Poster Map

Our commendatory reference recently to the poster map issued by the P.L.M. Railway has been followed by the receipt from the Advertising Manager of the L.N.E.R. of five somewhat similar productions covering the greater part of that company's system from south to north. It so happens that we have already reviewed, in our issue of June 14 last, one of these excellent pieces of work by Mr. Montagu Black, when we remarked upon the refreshing spaciousness and sunlight embodied in his art. And strangely enough we had in mind Mr. Black's posters, among others far less successful, when we congratulated the P.L.M. on combining art and cartography more cleverly than we have yet seen it done. By dividing the L.N.E.R. among five posters, and adding a sixth for the M. & G.N., Mr. Black is working to a scale which gives his maps the quality of aerial pictures. The P.L.M., however, has placed the whole of its system on one sheet, so that it cannot beguile the eye with such pleasant images as ships at sea or ecclesiastical architecture. The central feature of interest is the railway itself, shown with far greater prominence than Mr. Black accords it. The P.L.M. map persuades and assists the stranger from abroad to tour the country; Mr. Black's pictures are a potent argument for the Englishman to snatch another week-end away before winter is on us.

* * * *

The Week's Traffics

For the past week the traffics of the four group companies as a whole show a net decrease of £34,000, the only bright spot being the L.M.S.R. return, which shows an improvement under every heading. This has reduced the net increase of the four companies together for the year to date to £814,000, an advance of 0·79 per cent. Passenger train traffics for the 36 weeks amount to £48,466,000, an increase of £1,168,000 or 2·47 per cent. Coal class traffics for the year to date show an all round decrease of £316,000, although that of the L.M.S.R. is only £7,000. There is some variation in the merchandise receipts which in the aggregate show increases of £69,000 on the L.M.S.R. and £42,000 on the Great Western, and decreases of £133,000 on the Southern and of £16,000 on the L.N.E.R. Mersey Railway traffics have been showing a slight improvement in the last two or three weeks, and the decrease for the year to date has been reduced to £2,621.

	36th Week				Year to date.	
	Pass., &c.	Goods, &c.	Coal, &c.	Total.	Inc. or Dec.	
	£	£	£	£	£	%
L.M.S R. ..	+ 11,000	+ 4,000	+ 2,000	+ 17,000	+ 480,000	+ 1·16
L.N.E.R. ..	— 9,000	— 10,000	— 9,000	— 28,000	+ 75,000	+ 0·25
G.W.R. ..	+ 2,000	— 8,000	—12,000	— 18,000	+ 132,000	+ 0·76
S.R	+ 2,000	— 5,500	— 1,500	— 5,000	+ 127,000	+ 0·89

* * * *

The World Crisis and Railways

We retain an obstinate optimism in regard to what is popularly called the world economic crisis, and is sometimes referred to as the economic blizzard as if it were due to some uncontrollable force of nature instead of, as is becoming obvious to larger and larger numbers of people, to arbitrary and amenable man-made economic rules capable of modification without causing revolutions or sacrifices. In a world teeming with all the materiai things that, during past ages, man has striven for, there is

XUM

still poverty. We are in prison with the door open, and the spate of national and international investigations into, and reports upon, how to make the best of conditions in prison continues unabated. This week we publish the summary recently adopted by the International Railway Congress Association of comprehensive reports upon the subject of the world crisis and railways. These reports, and the steps recommended in them, can do nothing by themselves to modify the crisis. They can merely lead to a more equitable distribution between the various forms of transport of the meagre traffic which people can afford. We have little doubt that the time will soon come when, so far from investigating how to divide up scarcity amongst hungry competitors, every form of transport will be looking after its own perfection, in order to provide the facilities which will be demanded by the people as soon as they realise that they can walk out of the door of their prison and enjoy the abundance which they themselves have produced.

* * * *

Overseas Railway Traffics

Except on the Central Argentine the tendency of Argentine railway traffics has been upwards during the past fortnight both in currency and in sterling. The exchange has averaged 17·03 pesos to the £ for each of the two weeks, compared with 17·17 and 17·15 respectively for the corresponding weeks a year ago. During the fortnight the Buenos Ayres Great Southern has improved its traffic position by £11,180, the Buenos Ayres and Pacific by £1,418 and the Buenos Ayres Western by £9,568, but the Central Argentine has added £20,339 to its former decrease. Canadian Pacific traffics have slipped back £74,200 in the past two weeks, and Bombay, Baroda & Central India receipts reflect the tendency in Indian goods traffic earnings to decline.

	No. of Week	Weekly Traffics		Inc. or Decrease	Aggregate Traffic		Inc. or Decrease
		£		£	£		£
Buenos Ayres & Pacific ..	10th	71,169	+	498	719,205	+	16,910
Buenos Ayres Great Southern ..	10th	120,669	+	8,191	1,165,641	−	65,605
Buenos Ayres Western	10th	43,805	+	7,070	403,334	−	26,986
Central Argentine	10th	106,230	−	5,933	1,175,750	−	117,437
Canadian Pacific	36th	492,000	−	58,200	16,211,000	−	110,800
Bombay, Baroda & Central India	21st	174,450	−	9,675	3,251,400	−	24,750

* * * *

Moroccan Railways

Up to the end of 1934 the Moroccan Railways were divided into two sections so far as the accounts were concerned, the first covering the lines from Marrakeh and Oued Zem to Petitjean, and the second the lines which were opened during the course of the year, namely, the Fez-Oudjda and Safi-Ben Guerir divisions. The receipts from the 360 miles of the first section in 1934 were fr. 72,173,708, an increase of 4·5 per cent. compared with 1933, but the operating expenditure rose by 8·7 per cent. to fr. 61,149,282, thus increasing the operating ratio from 83 to 86. The capital charges for the year amounted to fr. 9,839,480, so that the final balance was fr. 1,184,946. The phosphate tonnage over the first section rose by 13 per cent. to 1,247,094, but by reason of relief from the Government tariff, the receipts rose by 37·7 per cent. to fr. 28,599,670. In the working of the 320 route miles comprising the second section there was a considerable loss, the receipts totalling only fr. 7,385,090 against an expenditure of fr. 22,533,380, but it is expected that now the lines are in full operation the deficit will be wiped out in a year or two. Over the complete standard-gauge system the train-km. increased by 17·9 per cent. to 2,587,745, of which 1,860,628 km. were run by electric trains compared with 1,395,752 in 1933. The number of passengers carried decreased by 21·8 per cent. to 1,067,710, the number of native fourth-class passengers dropping from 936,265 to 762,081. Due largely to agreements reached with certain road interests, the goods tonnage increased by 9·4 per cent. to 1,962,095.

* * * *

The Danube-Save-Adria Railway

The profit and loss account of the Danube-Save-Adria Railway for the year 1934 closed with a surplus of 188,849 Gold Francs, as against 51,051 in 1933. Revenue from working was 120,631 G.F. against 134,671 in 1933, the reduction being due to increased outgoings for maintenance, but that due to holdings of various kinds was considerably better, rising from 126,457 to 295,626 G.F., due to receipts of an exceptional nature in connection with loan redemptions. Interest charges were 25,435 G.F. against 27,725. The Südbahn Semmering Hotel made a loss, however, due to political uncertainties, and the state of the exchanges in certain countries. The loss on the year, neglecting depreciation charges, was 60,000 G.F., whereas in 1933 outgoings and incomings balanced. At the general meeting of the company on June 28 it was resolved to redeem 7,521 shares which had been purchased at the expense of capital redemption account and to reduce the company's capital, by the nominal value of these redeemed shares, to the figure of 22,474,800 G.F., divided into 561,870 shares of 40 G.F. each. Out of the profit of 188,849 G.F., 9,442 was placed to reserve and 179,407 to capital repayment fund.

* * * *

American Train Interiors

The photographs we reproduce on page 426 this week show how far America has gone in the interior decoration and appointments of important expresses. Modernity was to be expected in such leaders of railway fashion as the Twentieth Century, the Hiawatha and the 400, but it has been combined with a restfulness for the body and the eye not always conceded by progressive designers. The styles of panelling adopted for walls and ceiling, the lighting, and, in the case of the Hiawatha, the shape of the windows, all strike a note novel enough to attract attention without being obtrusive. Of special interest is the armchair seating in the Hiawatha day coaches, where individually adjustable backs permit the degree of ease required and may compensate for the fact that, as the seats swivel in pairs, one is borne irresistibly with one's neighbour if he or she wishes to rotate towards the interior of the coach. We imagine, however, that such situations are far more easily surmounted in America than is the traditional carriage window problem in England, for it is hard to imagine dissension reigning for long in the atmosphere of grace and poise radiated from the typical (as we hope), travellers shown in our illustrations.

* * * *

Captain Lecky of the G.W.R.

Through an unfortunate typographical error we did less than justice to a famous seaman in our G.W.R. Special Centenary Number when we referred to the Marine Superintendent of the company from December, 1882, to October, 1898, as "S.T.S. Leeky." Captain Squire Lecky was a notable personality in his day apart from his association with the early years of the G.W.R. Marine Department, for his book "Wrinkles in Practical Navigation" has to be studied by every sailorman, and it ran into twenty-one editions in 45 years. Lecky was sent to sea as a midshipman in September, 1855, in "Dicky" Green's Indiaman *Alfred*, his father paying £80 premium for the year. Young Lecky saw that it was quite impos-

sible to live in that company without a considerable private income, so he insisted on serving out his time in another concern which was more suitable for a lad of limited means. When he had got his certificates in sail he went into the old Inman Line of transatlantic ships; finding promotion slow, he took command of a 500-ton tramp, but later went into the Pacific Steam Navigation Company, in which he speedily rose to master. Having particular trouble with one passenger he announced that he was not going to have his ship cheapened and made disagreeable for the others, so put the offender ashore. Unfortunately, the passenger was related to one of the company's biggest clients in Chile, and Lecky was dismissed, he subsequently brought a case, which he won, but it attained so much notoriety that it was difficult to find another job and he had to ship as boatswain after the first Lord Brassey had shown his sympathy and appreciation by having him as his guest on board the *Sunbeam* for a considerable time. In 1898 he had to retire owing to ill-health, and he died at Las Palmas in 1902.

* * * *

Power and Mechanical Signalling

In an editorial note in our issue of November 2, 1934, we referred to the relative proportions of mechanical and power signalling in Great Britain and estimated that there were 10,000 to 12,000 mechanical signal boxes and possibly 200 to 250 power ones, giving about 2 per cent. to power operation. In some countries the position is different. In Germany, for example, where power signalling was in use in quite a number of boxes when there were not half a dozen so equipped here, there were in 1928 about 17,000 mechanical and 885 power installations. Figures for the present year are not in our possession, but power working has certainly been extended in the meantime, either to replace mechanical boxes, or to concentrate the work of several boxes in one. In the early days of power operation several cabins were often provided where one or two would be considered sufficient today, as at Charlottenburg, Berlin, where the working at the western end of the station has been concentrated in a large cabin over the lines. The apparatus has gone through several stages of development and the so-called multiple-row locking frames have found favour in the last year or so, as they enable the size of the frames, and hence of the cabins, to be greatly reduced as compared with earlier designs. As we pointed out in the note above mentioned, however, mechanical signalling must for a long time continue to be the more usual form, in some countries at least.

* * * *

Railcars

No more admirable reports have hitherto been presented upon the subject of railcars than those of which we present an official summary on page 416. The complete and revised report of Messrs. D. Dumas and J. Lévy, to the International Railway Congress Association on this subject is a masterly document, and comes to the conclusion, with which our readers are aware we have long been in agreement, that railcars " are just what is wanted to satisfy the public demand for more frequent and, in some cases, faster services." This report reviews the whole railcar situation as it has developed to date, and the development has been extraordinarily rapid in the last five years. The three particular forms of motive power used are steam, heavy oil, and petrol. The steam railcar has had a limited application, principally in Great Britain, where it has given satisfactory service. Its use, however, is being steadily extended. The petrol railcar has been favoured in certain countries, but despite the precautions taken to reduce fire risk it is not being perpetuated on an extensive scale. Reliability is now combined with the other advantages of the diesel railcar, the peculiar merit of which is high running efficiency. Great attention has been given to suspension and the design of bogies to prevent discomfort at high speeds. Many railways are fitting shock absorbers and some have improved the riding by reducing the conicity of the tyres. Now—and not any too soon—greater attention is being paid to the matter of ventilation. No doubt between now and 1937, when the next session of the International Railway Congress is to be held in Paris, developments will continue at least as rapidly as hitherto, and by that time much valuable data will be available for further discussion.

* * * *

An Interesting Articulated Locomotive

On pages 424-425 of this issue we illustrate and describe an articulated locomotive of considerable interest in more than one respect. In the first place it is the joint product of two well-known firms of British locomotive builders, the design having originated with Kitson & Co. Ltd. of Leeds, whilst construction was undertaken by Robert Stephenson & Co. Ltd., of Darlington. The well-known Kitson-Meyer principle forms the basis of the design, and the engines, two in number, have been supplied for service on the Girardot-Tolima-Huila section of the National Railways of Colombia, where locomotives of this general type have achieved highly meritorious service over a period of 25 years and have shown themselves entirely suitable for the traffic conditions. The gauge of the railway is 3 ft. 0 in. and these new 2-8-0 + 0-8-2 type engines each develop a tractive force of 58,500 lb. at 85 per cent. of the boiler pressure, being an advance of more than 100 per cent. compared with the first engines built by Kitson & Company for the same railway in 1909. The work to be performed is arduous. Trains of 340 tons loading are hauled unassisted up the maximum grade of 1 in 25, and the engines were designed to suit a minimum curve of 236 ft. radius, for which purpose one pair of wheels in each group is flangeless, whilst the adjacent pair has thin flanges. The equipment is thoroughly up-to-date, whilst the general design and workmanship are of the highest class and well uphold the best traditions of British locomotive engineering.

* * * *

Beyer-Garratt Locomotives for Iran

In our issue of July 26 we referred to the progress and layout of the new standard gauge railway being built across Iran from the Caspian Sea to the Persian Gulf via Teheran, much of which is through extremely difficult country. The worst section is the Northern, which has to scale the abrupt and rugged escarpment of the Elburz Mountains. So difficult is the topography that spirally curved zig-zags and some 40 miles of 1 in 36 grade have had to be resorted to before the summit, at nearly 7,000 ft., is passed. The curves, which are practically continuous in many places, are of 660-ft. radius, and tunnels are many and lengthy. As announced in our Contracts and Tenders section, the Iranian Government has now placed an order with Beyer, Peacock & Co. Ltd. for four Beyer-Garratt articulated locomotives of high power. These engines, each to weigh over 200 tons, will enable a heavy load to be taken under these severe conditions. Apart from demonstrating the great advantages of the articulated type for overcoming such exceptional operating conditions, this order again calls attention to the advanced state of development to which the modern articulated engine has been brought by the pioneers of the Garratt system to whom this order has been entrusted.

XUM

Peak Period Problems

OUR enterprising contemporary, *Motor Transport*, so frequently interprets its task of defending road interests as synonymous with attacks on railway undertakings that we can scarcely blame it for having pursued this policy in its current issue by devoting a large portion of its front page to a special "road-minded" interpretation of part of the first paragraph in our editorial article of August 23 entitled "Peak Period Problems." Our phrase, which has proved so useful in the comments of our contemporary, was "On Saturdays in August most trains leave the London termini filled to capacity, often with numbers standing in the corridors, and the resultant complaints of overcrowding tend to bring railways into disfavour . . . . Expenditure on rolling stock which would be required only for three months of the year is obviously not a commercial proposition, and even if such extra accommodation was available, the extensive occupation of lines at holiday week-ends would make it impossible to find a path for more trains." This is a plain, straightforward statement of a difficulty appreciated by every railwayman, and one moreover, which arises, not through inadequacy of facilities, but by reason of the heavy concentration on the part of the public—to a large extent unnecessary—of its holiday travel desires. Our contemporary, however, interpreted this, without qualification, as "a frank admission by a railway newspaper of railway overcrowding and unsatisfactory travel facilities which cannot be remedied."

It may seem unnecessary to comment further on the misuse of our remarks, and it would, in fact, be so if these matters concerned only those well versed in the provision of travel facilities and regular (and satisfactory) handling of loads far in excess of the capacity of our roads. However, public opinion and goodwill are matters held in high regard by the railway companies and, lest some should be deceived, we feel justified in pointing out that in present circumstances congestion with all means of transport is unavoidable during a few Saturdays in the height of the summer, and that the reason for our original editorial article was to offer one or two suggestions for alleviating the position. Furthermore, the road transport operators for which *Motor Transport* is presumably an accredited mouthpiece, would scarcely feel that all their dreams had come true were the licensing authorities to require them to buy and maintain efficient motor coaches and then license them for regular service only on those few summer Saturdays when peak period traffic, by reason of its intensity, becomes a problem to the railways.

On the whole the licensing authorities set up under the Road Traffic Act, 1930, appear to have interpreted their duties impartially as the arbiters of difficult problems in which railways, road operators, and the travelling public all desire, not only adequate protection, but consistency of facilities, and apart from special cases they are imposing as a condition for road licences regular, all-the-year operations with proportionate permissive duplication in the holiday season. The stability of road interests themselves would be imperilled were many additional licences to be granted for long distance coach services, which might serve a useful purpose on a few summer Saturdays, but for the rest of the year would be in the position of many hungry dogs fighting for satisfaction out of a very small bone. Finally, we may observe that large coach operators themselves fully realise the very real problem associated with peak period traffic. Certain of the most important railway-associated operators have for some years past arranged interavailability with road services, and as recently as August 3 the Green Line coaches of the London Passenger Transport Board found it necessary to arrange with the four main line railway companies, with which it shares in the pool of London passenger traffic receipts, to accept Green Line coach passengers by railway on Saturdays and Sundays; on these days nearly all the passengers travelling out of London throughout the day desire to return after 5 p.m., and thus tax beyond capacity the coach facilities, although every available vehicle is put on the road.

* * * *

Controlling Railway Traffic

DURING the past few years the great increase in both passenger and goods movement on our railways has intensified the problems associated with the safe and expeditious handling of this traffic. An effective solution of certain difficulties is offered at the present time by the use of a sound amplifying system such as has already achieved successful results in other spheres. There are various uses to which such equipment may be applied in connection with railways. For instance, during shunting operations in goods sidings the procedure at present in force on some lines is for the foreman shunter to issue his instructions through a megaphone, while in other cases orders are issued and received by the "dumb signal" method, that is, by making signs with the arms. The installation of sound amplifying equipment provides a much more efficient means of control, as by having a microphone installed in a signal box or at some other convenient point, instructions can be transmitted by the foreman through loudspeakers situated at various locations in the sidings or goods yard, and clearly heard by the shunters working some distance away. This method is also very much safer, as with an ordinary megaphone speech is not always easily understandable, while with the dumb signal method there is always the risk of misinterpretation.

The advantages of sound amplifying equipment on certain railway station platforms is immediately apparent, and indeed successful experimental use of such plant has already been made, and a recent installation at Euston is described on page 425, where G.E.C. equipment is in use. By installing a microphone in one of the offices and having loudspeakers situated at various points along the platform, it is a simple matter to keep passengers fully informed regarding the arrival and departure of trains. In this way passengers no longer find it necessary to hinder railway officials by asking them questions, an advantage even more appreciated during rush periods and holiday seasons. Also, the psychological effect on certain people of receiving the information verbally instead of by reading it on indicators must be taken into consideration. It is very true that many people will never believe station indicators, and require their information to be given them by word of mouth before they are fully convinced that their train departs from such-and-such a platform at a certain time. In addition to the amenities already noted, sound amplifyipg equipment is a valuable advertising medium. It provides a ready means of informing passengers of future excursion trains and cheap trips, and can also be used for advertising holiday resorts. A further use is to help in the recovery of lost children and property on crowded platforms.

Another example of the type of sound amplifying equipment which is readily suited to railway purposes is that put forward by the British Thomson-Houston Co. Ltd. This company's system is already used for large and intricate installations of sound amplification in this country. The equipment comprises a microphone, powerful amplifiers, and loudspeakers, and may be supplied for outputs up to 400 watts. For railway work a

40-watt or larger power amplifier would be required with loudspeakers situated at different points of vantage. This type of equipment uses a 10-watt amplifier as a voltage amplifier, one 10-watt unit being suitable for operating a maximum of ten 40-watt amplifiers connected in parallel to give a total power output of 400 watts. We have attempted in the foregoing remarks to describe only a few of the uses of sound amplifying equipment on railways, as no doubt many other applications will come readily to mind. There is no doubt that sound amplification offers many advantages, and the installation of suitable equipment is well worth the serious consideration of railway authorities.

* * * *

Belgian Light Railways

THE Société Nationale des Chemins de fer Vicinaux celebrated its jubilee in the year 1934, having been constituted under a law of 1884, and the system of light railways worked by it has provided an economical system of transport, the tracks frequently being laid upon or alongside public roads. Of the capital of the undertaking far the greater part has been subscribed by the State, the provinces, and the communes, but there are some private shareholders. The total length open in 1934 was 4,720 km., mostly on the metre gauge, of which 1,227 km. were electrified. For many years these light railways, besides furnishing a most useful service, paid their way as a whole, and, as shown in a report on Continental railways made to the Board of Trade in 1910, for each of the ten years 1899 to 1908 inclusive gave a return of not less than 3 per cent. At that time about 3,336 km. were open, of which 3,136 were steam-worked and 200 were electrically operated. Like other railway undertakings, however, they have now been hard hit by the financial crisis and the competition of road transport. They lie also under the particular disadvantage of a certain amount of duplication with the secondary lines of the main line railway system. Of recent years the administration has been carrying on a vigorous programme of electrification where prospects appeared suitable. A map published with the report shows in separate colour the electrically operated lines and gives insets of the railways in and around the principal cities. The following table compares some operating results in 1934 and 1933, the financial figures being in Belgian francs which are now about 146·50 to the £:—

	1934	1933
Train kilometres	54,682,179	52,902,773
Operating ratio, per cent.	99·37	99·44
	Fr. (Belg.)	Fr. (Belg.)
Gross receipts	226,365,770	236,950,914
Expenditure	224,939,828	235,633,145
Net receipts	1,425,942	1,317,769

Though gross receipts declined by fr. 10,585,144, or 4·47 per cent., the saving in expenditure was fr. 10,693,317, or 4·54 per cent. In 1932 the overall operating ratio was 101·41 per cent. For electric lines the operating ratio in 1934 was 94·21 per cent. and for steam lines 108·89 per cent., the respective figures being much the same as in 1933. On the steam lines also adaptations of the older rolling stock and the adoption of railcars, of which 124 are now in use, have sensibly improved the traffic position. This has further been strengthened by the fact that the administration now works 2,788 km. of motorbus routes. In the report, however, the opinion is expressed that the financial position of the light railways undertaking will not be really satisfactory until the question of the *doubles emplois, i.e.*, as between the secondary lines of the main system and the light railways, and between the light railways and road traffic has been properly settled.

Passenger Traffic on the Railways

THE similarity of the problems facing the railways of the world in making good the loss of passenger traffic lends special interest to the passenger traffic report prepared by Mr. Eastman, the Federal Co-ordinator of Transportation (Section of Transportation Service) appointed under the U.S.A. Emergency Railroad Transportation Act, 1933. This report is a valuable contribution to the study of these problems and contains much constructive criticism of interest to the British railways. Passenger traffic on the American railways is unprofitable, the figures for 1933 revealing that $700,000,000 were expended on securing revenues of $500,000,000, the disparity being due mainly to road competition. On the other hand, the motorcar has revealed a travel desire producing a market four times as great as the rail market at its highest. This increased desire for travel is not confined to the United States, and nowhere in the world has more energy been displayed to turn to account the potentialities of rail travel than in Great Britain. Cheap half-day excursions combined rail, road, river and sea trips, and various all-in rail and road "cruises" are instances of the successful efforts now being made to attract new business, and it is significant that the American report recommends the development of "pleasure, educational, sporting and other special event travel by all-expense trips, train cruises and similar services."

The report emphasises the importance of safety, accessibility, hospitality, convenience, comfort, frequency and speed as essential travel requirements. Regarding accessibility, it states that, in order to be made attractive, rail travel must give facilities enabling travellers to arrange their journeys by telephone, have tickets delivered, cab service arranged, luggage collected and delivered, and car transported. The British railways' arrangements for the collection and delivery of luggage and the conveyance of passengers' motorcars are excellent, but the suggestion that door-to-door conveyance should be afforded at an inclusive fare is worthy of consideration. There would appear to be scope for increasing the accessibility of British rail travel by extending the number of booking agencies. There may be something to be said for the policy of restricting the number of such agencies, but many potential passengers have been lost through inability to obtain rail tickets at the smaller agencies where, quite naturally, every effort has been made to advance the claims of competitive transport.

With regard to hospitality, Mr. Eastman has noted an absence of that personal helpfulness which is a potent factor in making a satisfied customer, and his dictum that rail travel should be humanised, made hospitable, and passengers treated as guests rather than "carrier obligations," is worth special notice. British railwaymen are among the most courteous public servants in the world, but it is nevertheless true that passengers often encounter casual and indifferent service at stations, and in refreshment rooms and restaurant cars. The report claims that stations should be made more restful and comfortable and less ostentatious and forbidding. Stations are the shop windows of the railways and should therefore be clean, bright and attractive, and reasonably comfortable. Too often they are not, and passengers have to wait in badly lit rooms almost bereft of furniture and frequently dilapidated. In a recent speech, Mr. William Whitelaw, Chairman of the L.N.E.R., acknowledged that waiting rooms needed to be brightened, and at some of the larger stations this has been done. Another suggestion is that railway stations should be made civic centres by the establishment of popular restaurants, theatres, &c.

Dealing with the question of local train service, the

XUM

report stresses the importance of frequent and regular trains adjusted to the commercial and social habits of each large metropolitan area, rather than for "operating convenience." The problem facing the railways, in America and elsewhere, is to provide a service as frequent and convenient as that furnished by road transport, either public or private. Such a service would obviously have to depend upon smaller and more economical units than the orthodox steam train. The report regards an average of 45 m.p.h. as the ideal for suburban travel, but considers that, providing frequency and dependability are assured, an average of 30 m.p.h. might ordinarily suffice. For long distances much higher speeds are required if rail service is to be made thoroughly attractive. The British railways have effected substantial accelerations in recent years but, as pointed out in THE RAILWAY GAZETTE of June 14, there is scope for further improvement. Cross-country services are in urgent need of acceleration. Many of these long runs are covered at average speeds of less than 40 miles an hour, and the development of cheap air travel will make it increasingly difficult to secure custom for such services.

The report considers that American railway sales promotion is deficient in several important essentials, and suggests that the American Association of Railroads be charged with the sole responsibility for the re-creation of an American rail travel market, and for a continuous, aggressive campaign of national and local advertising. In 1933, the American railways spent about $7,000,000 on publicity, but after allowing for timetables, &c., only $300,000 remained for national advertising. Judging by their announcements in the national press, the British railways' appropriations for this type of publicity are also on the small side, although they advertise extensively in the provincial press. It is suggested in the report that the present fares in America are too high, and reductions are recommended to 1½ cents a mile for local travel, 2 cents for distance travel, 3 cents including reserved accommodation, and 5 cents for luxury travel. The experience of the British railways with monthly return tickets affords ample proof that the policy of reduced fares, enlarged facilities and freedom from restrictions are valuable incentives to increased travel. The report contains some controversial points, such as the question of free transportation for railway employees, and it is not possible to agree with all the recommendations. Nevertheless it is a very striking document, prepared in the belief that the American railways have not lost their passenger traffic irrevocably, and that by adopting a bold policy they could restore it to a profitable basis.

LETTERS TO THE EDITOR

(*The Editor is not responsible for the opinions of correspondents*)

Value of First Class Traffic

P.O. Box 782,
Bulawayo, August 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your contributor on the value of first class traffic in THE RAILWAY GAZETTE of July 12 does not exhaust all the possibilities. The case in favour of first class carriages for suburban traffic is heavily in their favour, in spite of the absence of first class accommodation on the tubes. Trains can be made up into fixed, or infrequently altered sets, and the supply of first class accommodation can be adjusted to meet the requirements of a comparatively constant demand, and there is, therefore, no wasteful supply of first class rolling stock. The reason why the Great Western appears to supply first class seats lavishly is that it has relatively small suburban traffic: the Great Western is not really extravagant with its first class passengers.

On trains, other than suburban services, the demand for first class accommodation is, largely, a demand for exclusiveness. This demand could be met, far more efficiently than at present, by providing one type of compartment only, and converting a suitable number of these into first class compartments merely by labelling them first class when they were so required, and after the train had been made up. The labelling could be done by means of a reversible board operated by a key of standard design issued to all station masters. If first class compartments were of the type described above, the difference between first and third class fares would probably have to be less than it is now; but the present difference in fares may easily be too great as it is.

The new standard coach could be made a good deal more comfortable than railway coaches usually are today, by borrowing from the design of motor seats, and giving railway seats a more decided tilt backwards. If railway seats, and ordinary chair seats for that matter, were tilted backwards, away from the horizontal, they would be far more comfortable than they are, as the motor industry has already proved. It is only a matter of four inches, and, with standardised construction, the change should hardly affect costs at all. The newest, or otherwise best, compartments would be labelled first class when so required, and the first class passenger would get some extra comfort with his exclusiveness. I claim no originality for this labelling proposal: I remember hearing it recommended by a high authority many years ago.

Yours faithfully,
ROGER GIBB

[First and second class are thus made interchangeable on local services in certain Continental countries, *e.g.*, Germany and Switzerland. Mr. Gibb's comment on carriage seating endorses our own editorial remarks of August 30.—ED. *R.G.*]

Locomotive Headlights

Montevideo, Uruguay,
South America.
August 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I observe in your issue of July 12 a letter from "C. M. E." suggesting the advantage of using electric headlights on locomotives in order to show up any obstruction that may exist.

It is not possible to have powerful electric headlights in use on any railway having double-line working and operating under an ordinary semaphore or colour-light signalling system. The electric headlight on an engine running in an opposite direction to another completely dazzles the driver and he is quite unable to see the signal lights even when these are of the shrouded colour-light type. On railways equipped with colour-light signals the headlight only slightly diminishes the light-signal to the driver of the engine from which the headlight itself is shining.

Practice on the Central Uruguay and other railways has shown that it is indispensable on double line sections for the headlights to be dimmed to an extent which makes them of little more practical use than the indication headlights used in England.

The matter of tail lights, is, however, on a different footing; there is no doubt much more effective red tail lights can be provided; passenger train tail lights on railways in this country for instance are much more effective than those commonly used in England.

Yours faithfully,
P. C. DEWHURST

PUBLICATIONS RECEIVED

La Traction Electrique et le Chemin de fer. By H. Parodi and A. Tétrel. Paris: Dunod, 92, Rue Bonaparte (VI^e^). 10 in. × 6½ in. 548 pp. 3 folding plates. Price fr. 168 net.—It is a sad reflection on French publishing methods that such a book as this should be allowed to appear on the market in a cheap-looking paper binding, for the contents are of a quantity and quality which make it the most important work on railway electrification that has come to our notice in post-war years. Compiled jointly by an old Chief Electrical Engineer of the Paris-Orleans Railway and an *Ingenieur Honoraire* of the same company, the complete work is to consist of two volumes, of which that under review, the first, is itself divided into two sections with a total of ten chapters dealing comprehensively with all the factors influencing the electrification of steam railways, including the operation of steam and electric lines, the movement and resistance of trains, the relative capacities of different types of lines, the nature of the stock to be used, signalling, adhesion, and braking. Very wisely, no space is wasted in giving an illustrated historical account of electric traction. With equal wisdom the authors, when dealing with the movement of trains, consider the design and operation of an electrified railway as a whole from the view-points of the traffic officer and the electric traction engineer, and are not content to follow the more usual text-book method of explaining the calculation of a simple speed-time curve while leaving its absorption into the working time-tables a matter of conjecture. It is this practical railway note, dominant throughout, which gives the work its value and makes it differ pleasantly from many other books with similar titles. As is essential for the complete understanding of the subject, mathematical treatment is plentiful, but for assistance in working out speed-time curves and performance there are three folding charts covering the use of three-phase motors, series motors (d.c. and single-phase) and steam traction. This must be the first time that such a chart for steam locomotives has been published. For those whose requirements are a broad general knowledge of railway electrification, rather than the ability to appreciate and solve the many detailed problems associated therewith, the book has a certain value by reason of the numerous *obiter dicta* giving definite facts and figures relating to stated electrified systems. The only direction in which the book does not seem to be up-to-date is in the section on train resistance, where the inclusion of a number of ancient formulæ, such as those of D. K. Clark, Von Borries, and Aspinall is not warranted. Concentration on the more recent investigations would have given greater clarity of exposition. Moreover, no use has been made of the extensive wind-tunnel experiments made at Friedrichshafen and in the U.S.A. during the present decade. The 205 line illustrations, though small, are clearly reproduced, but the four half-tones might well have been omitted, for they are unimportant and leave the reader wondering why they were put in.

Descriptive Diagrams of the Locomotive. Third Edition (Revised), June, 1935. By A. F. Hunt, Shrewsbury: Wilding & Son Ltd., 33, Castle Street. 8¼ in. × 5½ in. 52 pp. Price 1s. 6d. Post free.—The modern locomotive is the outcome of years of practical and scientific experience, but the provision of the very latest and most approved equipment is not all that is required, for only when the enginemen, upon whose shoulders the success in service of a design so largely depends, fully understand the best ways of handling, will the maximum advantage and economy be secured. The methods of handling the locomotive of yesterday and those of today are very different, so too are the varying methods used by individual enginemen on present-day machines. Much of the enginemen's art has been developed on rule of thumb lines, and old habits die hard. The only remedy is proper instruction by competent people. Invaluable work in this connection is carried out through the medium of locomotivemen's mutual improvement classes, and these, in their promotion and continuance, deserve the readiest support. The work now before us has been prepared by a G.W.R. locomotive driver who is also an instructor in the Oxford and Oswestry Improvement Classes, and is one which gives us real pleasure to review. With a simple, direct treatment and some really excellent diagrammatical sketches, it fulfils its purpose of explaining the construction and functioning of locomotive components for the man on the job, and in a way, too, that many learned works, assisted perhaps by elaborate working drawings, completely miss. The subjects treated within the scope of the 52 pages include Swindon superheaters, sight feed lubricators, slide and piston valves their construction and failures, link motion, injectors, ejectors and vacuum and steam brakes. Although dealing exclusively with equipment used on locomotives owned by the G.W.R., this little book is well worthy of the notice of all enginemen, and can be strongly recommended also to the student of G.W.R. locomotive practice. The size of the book lends itself to tucking away in the working bag or carrying in the pocket. The author pays tribute to the work of his colleague, Mr. A. E. King, of Oxford, in the Mutual Improvement Classes Federation and to the assistance rendered to him by that gentleman and Mr. F. Peach in the present production. He need not have regretted the high price, 1s. 6d., at which the cost of preparation obliged him to price his helpful work. It is a splendid and very cheap eighteen-pennyworth, and we wish it all success.

L'Autorail. Special number of *La Revue Pétrolifere*. Paris: 23, Rue de Constantinople. (VIII^e^.) 12 in. × 9 in. 148 pp. Paper covers. Price fr. 50 net.—This exceptionally well-produced publication describes the various types of modern steam, petrol, and diesel railcars in many parts of the world, but has particular reference to the vehicles running in France and on the Continent generally, although none of the up-to-date 300, 420, and 820-b.h.p. German vehicles finds a place in the text. The American high-speed trains receive but scant attention, and only the Union Pacific three-car distillate-engined train (erroneously described as diesel) and the Burlington Zephyr are described, although several single-unit cars such as the Pullman Railplane are covered. The principal omission from the book is an account of the Canadian National diesel cars, perhaps the most interesting application in the world considering the operating data available. Illustrated descriptions of British vehicles are limited to the first G.W.R. car and the Karrier Ro-railer, but there are short articles on the Armstrong-Whitworth railbus and the Sentinel-Cammell cars. Operating results are covered within the limit of two pages, but the illustrated descriptive chapters covering the various makes of railcars are backed up by short sections on such subjects as braking, streamlining, use of aluminium for body-work, transmission systems, and lubrication. Without delving into any great detail, these sections contain useful information. A pleasing point is the clearness with which the line drawings have been reproduced, but the whole 120-odd illustrations are of good quality. This work has been written essentially from a French standpoint; nevertheless, we have read it with considerable pleasure and profit.

Aluminium Structures.—Items in the series of illustrated handbooks published by the British Aluminium Co. Ltd. have been commented upon several times in these pages, so that the latest addition to the list requires no introductory comment beyond the remark that it covers its subject in letterpress and pictures just as successfully as its predecessors. The development of light aluminium alloys for structures normally made of steel is here illustrated in such applications as crane booms or jibs, travelling cranes, and bridges. The examples selected are mainly from the United States, where the properties of such an alloy as duralumin, of which 1 lb. will support nearly three times the load carried by 1 lb. of structural steel, are being thoroughly exploited. The book concludes with pages on the properties of aluminium alloys and of structural components manufactured therefrom, and has a useful section dealing with workshop practice, particularly with regard to riveting.

XUM

THE SCRAP HEAP

Fifty years ago *The Electrician* of August 21, 1885, stated that iron telegraph posts had been introduced with great success in Switzerland, where they had already been erected along 350 miles of railway. In Prussia also experiments were in progress on the railway from Weissenfels to Gera and between Berlin and Potsdam.

* * *

A striking tribute to the cleanliness of the carriage windows was recently paid the L.N.E.R. when an experienced traveller, wishing to investigate the cause of a between-station stop, put his head *through* instead of (as he intended) *out of* the window, being under the impression that it (the window) was open. The tribute was, in fact, so striking, that the glass was broken and the head likewise, although fortunately to a lesser degree. If this sort of thing became common, the railway company might have to consider the necessity of adding one more to the many "Safety First" indications already in use in public vehicles, as, for instance "Lower before you look."

* * *

C.N.R. TELEPHONE INQUIRIES

Thirty-five thousand telephone calls were handled through the train information board of the Canadian National Railways at the Union station, Toronto, during a recent holiday period. The average number of calls handled was three a minute, rising to five at the rush hours. This was made possible by the installation of special telephone equipment, originally designed for financial and brokerage offices, where speed is essential; it is the first time this type of board has been used by a transportation company in Canada.

Some impressions by "Sallon" at the Great Western Railway centenary celebrations at Bristol, August 31, 1935

NEWCASTLE
AND
CARLISLE
Railway.

Notice is hereby Given,

THAT all Persons trespassing on the Railway, or the Works thereof, are liable *to a considerable Penalty* for each Offence. And that the Punishment for doing any Injury or Damage to the said Railway is

Transportation for 7 Years.

THE DIRECTORS GIVE THIS PUBLIC

WARNING,

that they are determined to Prosecute with the utmost Rigour, all Persons who may do any such Injury or Damage to the Railway; and that positive Orders are given to all the Servants of the Company, to give Information against any Persons trespassing thereon.

JOHN ADAMSON,
Clerk to the Company.

Railway Office, Newcastle upon Tyne, 21st August, 1835.

REWARD OR PUNISHMENT?

A glance at the above notice issued one hundred years ago by the Newcastle & Carlisle Railway suggests that it announced a scheme for the allocation of season tickets with a seven-years duration. We understand however, that the "transportation" advertised was not supplied by the company, but related to an early form of overseas cruise, including what are now described by the travel agencies as "organised shore excursions" at selected Empire ports.

* * *

What is believed to be the heaviest single-car shipment ever made left the Schenectady works of the General Electric Company on March 21 for its destination at the Potomac Electric Light & Power Company plant at Benning, D. C. The load consisted of a generator shaft, rotor, and poles for a 25,000-kW. frequency converter set, with a total weight of 367,000 lb. The converter will be used to deliver 25-cycle single-phase power to the Pennsylvania. The routing of this extraordinary load required the use of tracks of the Delaware & Hudson, the Pennsylvania, and the Western Maryland, clearances over the regular route between Schenectady and Benning being limited by the dimensions of the tunnels in the city of Baltimore, Md.—*From the "Railway Age."*

* * *

A London banker whose frugality has something to do with the size of his fortune always travels third class and always has a carriage to himself. His method has the simplicity of genius. Whenever the train is at a station he stands up and leans out of the window. Then with a crooked forefinger and a crafty smile he beckons potential passengers into his carriage. The most valiant travellers hasten to find a seat somewhere else.—*From the "Evening Standard."*

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

INDIA

Railway Problems

Prior to his departure for England on leave, Sir Guthrie Russell, Chief Commissioner of Railways, discussed various railway problems with commercial associations in Calcutta and Bombay. Mr. P. R. Rau, Financial Commissioner of Railways, also participated in the discussions. Regarding the recent offer to sell 50,000 tons of slack coal from the State railway collieries, it was submitted that this would cause no embarrassment to the trade. The association proposed the use of slack coal from the State collieries to burn bricks for the reconstruction of Quetta. The suggestion was welcomed by the Chief Commissioner, who promised a detailed inquiry into the matter.

Discussing the situation brought about by the sustained set-back in railway earnings during the current financial year, Bombay merchants suggested that railway expenditure should be substantially reduced and a larger turnover induced by the reduction of rates and fares. The rating policy should be directed to the development of internal, rather than foreign, trade. The Chief Commissioner pointed out that railway expenditure had been reduced in the last few years by over Rs. 5 crores. Further reduction could be made only with the greatest caution as there was the danger of possible deterioration of assets. He refuted the suggestion that the recommendations of the Pope Committee had not been carried out. Job analysis, which was Mr. Pope's main recommendation, was a slow process, but considerable success had already been achieved in this direction. In the Railway Budget for 1935-36, funds had been provided for inquiry into the intensive use of locomotives.

Concerning the proposed electrification of the B.B.C.I. suburban section from Borivli to Virar, it was suggested that the electrification of the Bombay-Virar section had brought neither acceleration nor increased frequency of train service. Sir Guthrie undertook to inquire into the matter and explained that the project was not only remunerative in itself but removed the necessity for considerable expenditure on steam stock which required immediate replacement.

Rolling Stock Manufacture in India

In discussing the wagon purchase policy of the Railway Board, the Chief Commissioner's contention that in the interests of the tax-payers the railways should pay competitive prices for their wagon requirements carried great weight with the Indian Merchants' Chamber. It was, however, urged on behalf of wagon manufacturers in India that a continuity of orders, even at competitive prices, would be welcomed. As regards the manufacture of locomotives and boilers in this country, Sir Guthrie stated that the Railway Board had examined the position at great length and that a full report would be placed before the Standing Finance Committee for Railways at the earliest opportunity. It should be remembered that British manufacturers have to depend largely on export orders, and therefore find it hard to compete with the prices of foreign firms whose equipment is continually occupied with remunerative domestic work.

Flood Reports

On August 21 the line between Alipur Duar and Baneswar, on the Cooch Bihar State Railway (managed by the Eastern Bengal Railway) was flooded by water overflowing from the Kaljani River, rendering the passage of trains or transhipment impossible. The local officers arranged to maintain normal railway services south of Baneswar and repairs were promptly taken in hand and expected to be completed in two days. A further interruption, however, occurred between Cooch Bihar and Dinhata owing to the River Dhala overflowing its banks, and the restoration of through running was postponed. A bridge on the Dehri-Rohtas Light Railway in Bihar has been washed away. The piers and one abutment of the bridge have been damaged, while the girders have not been traced. A new bridge will have to be built. Flood conditions in the River Brahmaputra are reported from Sirajganj and Gauhati. Most of the rivers in North Bengal and Bihar are at a high level.

Proposed Levy on Improvements Resulting from Road and Railway Construction

The Bengal Legislative Council is considering the Bengal Development Bill, which authorises the Government to impose an improvement levy on lands benefited by works of improvement carried out by the Government. In the course of the discussions it was declared that the tax would also be payable on account of improvements arising out of the construction of railways and roads. This announcement took the legislators by surprise, as no such proposal was put forward during the committee stage of the Bill. As far as railway construction is concerned, funds are provided by the Government of India, and it is only when schemes of construction sponsored by local authorities are considered unremunerative that the latter are asked to guarantee the Central Government against possible losses on the working of the projected railway. In the circumstances it is considered inequitable that the Government of Bengal should propose to levy the improvement tax in respect of railways built by the Government of India. Further clarification of this point will possibly follow.

BRAZIL

Viação Ferrea do Rio Grande do Sul

The question of railway rates is again causing much concern to traders and to the Rio Grande State Government, which cannot lower them in their entirety, on account of the present financial situation of the Viação Ferrea. Accordingly, the Federal Interventor, Sr. Flores da Cunha, has appointed a special commission to investigate the situation, and evolve a practicable basis for rate modification that will benefit the railway and yet not aggravate the crisis through which most of the industries in the State are passing.

ARGENTINA

Institution of Civil Engineers (Buenos Aires Association)

At a meeting of the above asociation, held on August 1, Mr. H. W. Stevens, B.Sc., A.M.Inst.C.E. (B.A.G.S.R.), read an interesting paper entitled "Notes on the Pilcaniyeu-Bariloche Railway Construction" (an illustrated article on which appeared in THE RAILWAY GAZETTE of June 22, 1934). The Chairman of the Association, Mr. L. A. Woodbridge. M.Inst.C.E. (Chief Engineer, Central Argentine Railway), presided over a large attendance of members.

The lecturer explained that the Pilcaniyeu-Bariloche extension of the State Railways in Northern Patagonia formed the final link in the 1,742 km. of continuous track between Buenos Aires and the Southern lakes at Nahuel Huapi. At one time the line was intended to be a transcontinental one joining the port of San Antonio on the Atlantic coast with Valdivia in Chile, via a tunnel 1½ km. long through the Andes 1,200 m. above sea level, to the north of Lake Traful. The present line from San Antonio to Bariloche followed the old Indian trail used by the explorer Muster in 1870 and by Dr. Francisco Moreno in 1879-80. It was located roughly midway between the two natural transcontinental routes formed by the Rio Negro to the north and the Rio Chubut to the south. The construction of the line started in 1910, and Bariloche station was opened to public traffic in 1934, so that some 24 years were occupied in building the 625 km. of line. The work was suspended on several occasions for lack of funds, the last time in 1931, when railhead had reached Pilcaniyeu, some 60 km. from Bariloche. In 1933 the

XUM

B.A.G.S.R. entered into an agreement with the State Railways to provide the capital and undertake the construction of the last section of the line and its complementary works, with a view to stimulating tourist traffic and developing this part of the republic. The remainder of the paper dealt with the progress and technical details of the work, which have already been described in THE RAILWAY GAZETTE.

NEWFOUNDLAND

Government Lines

The Newfoundland Railway, owned and operated by the Government, has a total length of 750 miles. It operates a service twice weekly in the winter season and thrice weekly in the summer months between St. John's and Port-aux-Basques, where the Government steamer connects it with the North American railway systems at North Sydney. Within the past two years some branch lines have been discontinued and the tracks taken up. During the winter of 1934-35 extensions were made to the docks at Port-aux-Basques and a large warehouse was erected to store newsprint from the paper mill at Corner Brook. This work was undertaken to enable shipments of newsprint to be made during the period when ice prevents the use of the docks at Corner Brook. The railway also operates a building and repair shop at the St. John's terminal. During the past year 25 box cars for carrying newsprints were assembled and partly made there, the undercarriages being imported from the U.S.A.

Financial Results

Following is a comparative statement of the earnings and expenses of the railways and steamships operated by the Government for the two years ended June 30, 1933 and 1934, respectively:—

	1932–33	1933–34
	$	$
Earnings	2,208,565	2,573,896
Expenses	2,422,897	2,711,514
Deficit	214,332	137,618

The following figures show passenger and freight handled during the two fiscal years ended June 30, 1933, and 1934, and indicate a gradual increase of traffic reflecting the improved business conditions in the island:—

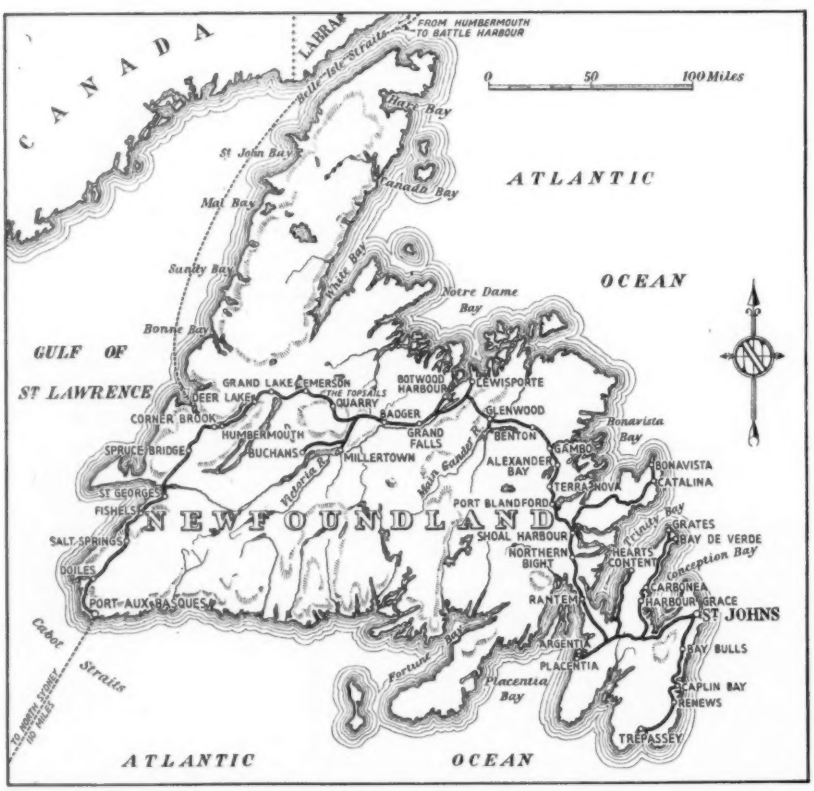
	1933	1934
Passengers ..	112,819	127,392
Freight	340,245 tons	386,112 tons

Freight Classification

The principles of the Canadian freight classification, as approved by the Board of Railway Commissioners for Canada, are used by the Newfoundland Railway in handling freight.

Private Railways

The Anglo-Newfoundland Development Company operates a railway from Bishop's Falls to Botwood, and the Buchans Mining Company operates one from Buchans to Millertown.



Sketch map of the Newfoundland Government Railway, which comprises 750 route miles of single 3 ft. 6 in. gauge track

UNITED STATES

Regulation of Road Transport

At long last Congress has enacted a law establishing federal regulation of interstate motor carriers of both freight and passengers, and the task of setting up the regulatory machinery has been entrusted to the Federal Co-ordinator of Transportation, Mr. Joseph B. Eastman, who is also a member of the Interstate Commerce Commission, the authority which has for 50 years supervised railway transport. In view of Mr. Eastman's record, it may be assumed that the regulation will be effectively administered, but the magnitude of the task makes it too much to expect that an immediate increase in railway traffics will result. The working out of the scheme in the coming months, however, ought to serve eventually to eliminate many "fly by nights" from the road. The federal authority embraces not only the granting of licences, but also covers the control of rates, accounting, and hours of labour of road transport employees.

This measure is the only one enacted by Congress which offers any promise of rescuing the railways from their desperate plight. No action was taken to repeal the measure which prevents the railways from making exceptional rates to points where water competition exists unless they will make proportionate exceptions in rates to intermediate points where such competition does not exist. This provision has prevented the railways from meeting the competition of shipping between the East and West coasts through the Panama Canal. It is one of the most serious handicaps to the prosperity of the trans-continental railways, *i.e.*, those operating between the Mississippi and the Pacific coast. Congress also failed to enact a measure providing for regulation of water carriers, which disinterested officers of the Government, including Mr. Eastman, had urged equally with motor transport regulation.

Road and Water Carriers Favoured

Nothing has been done to reduce the subsidies to the railways' competitors. An appropriation of £123,000,000 was made for improving rivers and harbours, all out of the general budget, without one penny to be recovered by special levies on users of these facilities. Road fees, in most states, continue absurdly inadequate when compared to the outlays being made for road construction and maintenance. In Georgia, for instance, any motor vehicle, regardless of size or weight, is licensed for an annual fee of 12s. The petrol tax varies from state to state, but 2½d. per imperial gallon would appear to be about the average. Highway expenditures in the United States are running at considerably more than £400,000,000 per annum, with road licence fees and petrol taxes aggregating only about half that sum. Competing with the public purse is a difficult business.

BRITISH RAILWAY STATISTICS

"The Railway Gazette" monthly table of freight and passenger traffic figures for May, 1935, as compared with the corresponding period in 1934, compiled from the Ministry of Transport Statement No. 186

Description	Great Britain*	Great Western	London & North Eastern	London Midland & Scottish	Southern
PASSENGER TRAIN TRAFFIC—					
Number of passenger journeys (excluding season ticket holders)	108,094,228	7,405,240	15,009,343	24,745,227	18,701 885
Increase (+) or decrease (−)	+ 6,568,863	− 445,151	− 93,788	+ 23,666	+ 586,561
Passenger receipts (excluding season ticket holders)	£4,068,033	£523,412	£781,451	£1,267,109	£888,280
Increase (+) or decrease (−)	− £181,842	− £47,948	− £49,172	− £114,186	− £31,193
Season ticket receipts	£725,898	£49,735	£126,711	£191,101	£232,650
Increase (+) or decrease (−)	+ £33,164	+ £4,283	+ £2,275	+ £1,823	+ £14,218
Parcels and miscellaneous traffic receipts (excluding parcels post)	£1,152,384	£213,087	£339,618	£444,095	£133,277
Increase (+) or decrease (−)	+ £17,850	+ £13,518	+ £9,875	+ £3,220	− £5,088
FREIGHT TRAIN TRAFFIC—					
Freight traffic (tons) (excluding free-hauled)	19,097,686	4,609,603	8,857,494	8,861,156	1,181,849
Increase (+) or decrease (−)	− 1,794,774	− 386,703	− 631,675	− 611,805	− 69,430
Net ton-miles (excluding free-hauled)	1,080,550,057	200,299,830	361,158,154	439,689,884	49,864,905
Increase (+) or decrease (−)	− 57,556,447	− 8,891,221	− 28,477,562	− 14,148,842	− 3,880,394
Average length of haul (miles) (excluding free-hauled)	56·58	43·45	40·77	49·62	42·19
Increase (+) or decrease (−)	+ 2·11	+ 1·58	− 0·29	+ 1·71	− 0·76
Freight traffic receipts	£6,208,145	£1,045,000	£2,089,600	£2,526,000	£348,047
Increase (+) or decrease (−)	− £249,108	− £71,000	+ £18,600	− £156,000	− £26,612
Receipts per ton-mile	1·379d.	1·25d.	1·39d.	1·38d.	1·68d.
Increase (+) or decrease (−)	+ 0·017d.	− 0·03d.	+ 0·11d.	− 0·04d.	—
Freight train-loads—					
Average train-load (tons)	123·25	129·01	127·84	121·17	105·02
Increase (+) or decrease (−)	+ 1·28	+ 2·43	− 2·35	+ 3·52	+ 1·31
Net ton-miles—					
Per train engine-hour	1,023·89	1,084·21	1,064·80	1,001·37	847·89
Increase (+) or decrease (−)	+ 11·54	+ 23·41	− 1·99	+ 22·17	− 8·01
Per shunting-hour	855·03	777·35	922·06	897·46	579·35
Per total engine-hour	465·94	452·74	494·15	473·28	344·18
Net ton-miles per route-mile per working day	2,592	2,563	2,760	3,041	1,157
Increase (+) or decrease (−)	+ 93	+ 98	+ 46	+ 160	+ 23
Wagon-miles. Total	321,087,641	58,478,220	110,827,699	133,711,681	16,179,360
Increase (+) or decrease (−)	− 16,058,775	− 2,524,316	− 6,046,724	− 6,281,868	− 1,008,047
Percentage of loaded to total	66·32	67·68	63·50	68·16	66·14
Wagons per train—					
Total	34·38	34·91	34·79	34·29	31·99
Increase (+) or decrease (−)	+ 0·44	+ 0·89	+ 0·03	+ 0·54	+ 0·65
Loaded	22·80	23·63	22·09	23·37	21·16
Empty	11·58	11·28	12·70	10·92	10·83
Train-miles. Coaching—					
Per train-hour	15·21	14·04	14·39	14·61	17·82
Per engine-hour	12·11	11·11	11·15	11·09	14·55
Train miles. Freight—					
Per train-hour	9·76	10·19	9·76	9·63	9·92
Per engine-hour	3·78	3·53	3·91	3·91	3·23
Engine miles. Total	43,958,245	6,885,607	12,060,620	16,251,952	5,884,675
Increase (+) or decrease (−)	− 484,817	− 145,645	− 142,452	− 131,077	− 56,091
Mileage run by engines. Total train-miles—					
Coaching	22,812,357	3,099,196	5,237,349	7,453,918	4,352,746
Freight	9,340,126	1,675,076	3,186,019	3,898,967	505,804
Engine-hours in traffic. Total	4,549,013	776,879	1,353,593	1,751,157	473,774
Increase (+) or decrease (−)	− 135,807	− 30,683	− 46,618	− 41,386	− 13,865
Shunting miles per 100 train-miles—					
Coaching	7·43	6·93	6·54	8·11	8·16
Freight	72·02	82·89	68·16	66·84	95·39

* All standard gauge railways

Passenger Traffic Statistics: Number of journeys, receipts, and receipts per journey (excluding season ticket holders)—May, 1935

Subject	Great Britain	Great Western	London & North Eastern	London Midland & Scottish	Southern	Cheshire Lines Committee	Liverpool Overhead	London Passenger Transport Board†	Mersey
Full fares—									
Passenger journeys	35,810,469	704,653	1,205,119	1,664,050	2,871,179	19,667	150,672	28,317,278	78,155
Gross receipts	£926,778	£76,687	£120,526	£129,971	£199,093	£2,772	£1,559	£379,571	£1,385
Receipts per passenger journey	6·21d.	26·12d.	24·00d.	18·75d.	16·64d.	33·83d.	2·48d.	3·22d.	4·25d.
Reduced fares—									
Excursion and week-end—									
Passenger journeys	41,740,466	4,415,288	9,295,298	14,845,044	9,374,717	413,932	110,493	1,544,494	623,164
Gross receipts	£2,398,597	£364,264	£527,511	£887,306	£517,439	£23,341	£989	£34,205	£9,669
Receipts per passenger journey	13·79d.	19·80d.	13·62d.	14·35d.	13·25d.	13·53d.	2·15d.	5·32d.	3·72d.
Workmen—									
Passenger journeys	25,882,781	1,779,074	3,451,657	6,877,620	5,571,648	229,278	207,244	6,709,954	175,204
Gross receipts	£376,988	£26,325	£55,852	£110,560	£92,230	£3,960	£1,649	£74,211	£1,602
Receipts per passenger journey	3·50d.	3·55d.	3·88d.	3·86d.	3·97d.	4·15d.	1·91d.	2·65d.	2·19d.
Other descriptions—									
Passenger journeys	4,636,363	500,825	1,052,536	1,346,783	882,297	60,397	41,039	658,699	14,278
Gross receipts	£332,648	£48,359	£70,325	£123,854	£77,162	£4,380	£271	£5,506	£225
Receipts per passenger journey	17·22d.	23·17d.	16·04d.	22·07d.	20·99d.	17·40d.	1·58d.	2·01d.	3·78d.
Total—									
Passenger journeys	108,094,228	7,405,240	15,009,343	24,745,227	18,701,885	723,410	509,448	37,230,425	890,801
Gross receipts	£4,068,033	£523,412	£781,451	£1,267,109	£888,280	£34,594	£4,468	£493,493	£12,881
Receipts per passenger journey	9·03d.	16·96d.	12·50d.	12·29d.	11·40d.	11·48d.	2·10d.	3·18d.	3·47d.

† Includes passengers originating on the railway undertakings, and on the Whitechapel and Bow Joint Railway

XUM

INTERNATIONAL RAILWAY CONGRESS ASSOCIATION

Two comprehensive reports (I) on railcars, and (II) on the world crisis and railways, which have recently been presented and adopted, are summarised below—Also the agenda for 13th Session of the Congress, Paris, 1937, is set out

AT a plenary meeting of the International Railway Congress Association Permanent Commission in Brussels on July 6, summaries were adopted of the reports presented upon two questions of immediate interest. Question I dealt with "Rail Motor Cars from the Point of View of their Construction," Question II with "The World Crisis and Railways."

Question I.—Railcars

The terms of reference upon which reports were called for were as follow:—

Rail motor cars from the point of view of their construction. (A) Types of engines—Forms of transmission—Running gear—Brakes. (B) Underframe and body—Heating and ventilation—Auxiliary apparatus—Fire protections.

Messrs. L. Dumas and J. Lévy presented two preliminary reports on countries of the European Continent, dealing respectively with parts A and B, and one final complete and revised report dealing with the two parts together. In addition, Mr. L. Dumas presented a special report. Mr. E. Wanamaker reported upon other countries. All these reports have appeared in the Bulletin of the International Railway Congress Association. The summary adopted by the plenary meeting on July 6 reads as follows:—

I.—In the opinion of most railways:

(1) Rail motor cars are just what is wanted to satisfy the public demand for more frequent and, in some cases, faster services;

(2) The lower cost of the railcar-mile makes it possible to effect operating savings.

Consequently, these railways have ordered large numbers of railcars, necessarily of varying types, as the prototypes are still in the experimental stage.

Over 750 railcars or rail motor trains are at present under construction or on order, to 85 different designs.

Railcars with internal combustion engines (especially diesel-engined) are generally preferred at the present time.

II.—Steam railcars have given satisfactory results, especially in Great Britain, where a considerable number are in service, but where the use of railcars is not being extended owing to operating conditions.

The entirely automatic condensing steam railcar, such as the Doble system, the first example of which has been running in Germany since last year, appears to have a great future when the delicate technical features of the design have been perfected.

III.—In Italy, France, Czechoslovakia, Sweden, and the United States, petrol engines are favoured, especially for railcars with a high power-to-weight ratio. When the same fire precautions are taken as on aircraft, the fire risk inherent in petrol should be definitely lessened.

IV.—Minimum costs of maintenance, and especially of the periodic overhauls, are the principal factors deciding the type of diesel engine selected. The value of minimum weight per horse-power must also be borne in mind.

Diesel engines of many designs and of 250 to 300 h.p., and even over, are now available for railcar purposes.

The various triplet rakes in existence are fitted with 400-h.p. engines and over, the only exception being the Danish rakes which have four diesel engines, each 250 h.p. These engines are so improved today that they can be relied upon to work the services very well.

In order to make sure of their diesel engines running reliably, most railways take the greatest precautions in connection with their fuel oil which generally has to comply with certain given technical specifications, and is filtered and decanted before use.

A great effort is now being made to perfect the high-speed two-stroke diesel engine in the hope of saving an appreciable amount of weight relatively to the four-stroke engine. Supercharging is also under test.

V.—Mechanical transmission has gained ground over electric transmission during the last two years, especially in Europe. It is commonly employed now up to 300 h.p. and, contrarily to what might be feared, does not seem to fatigue the diesel engine. It has the advantages of efficiency and light weight. The free wheel or a hydraulic flywheel complete it in a happy manner.

Electric transmission is still preferred in the United States for all applications, and in Europe for high powers. However, it imposes a heavy strain on the diesel engine if not perfectly adapted to it.

Hydraulic transmission has not yet proved its value above 150 h.p. approximately, but much may be hoped for from the three 1,200 triplet rakes of the Reichsbahn which are to be fitted with hydraulic transmission.

The hydraulic transmission has the additional advantage of providing supplementary braking power.

VI.—Railcar bogies are generally lighter than those used on ordinary rolling stock. They are fitted with double suspension in some cases, and single in others.

To prevent hunting at high speeds, many railways are fitting shock absorbers, so far with satisfactory results. Others have improved the riding by reducing the conicity of the tyres.

The engine is usually carried on the bogie. Experience, however, has shown that the passengers can be made practically as comfortable when the engine is located in the body as when it is carried on the bogie.

VII.—Drum brakes of the automobile type are satisfactory on light railcars. On heavy railcars, the brake with blocks acting on the tyres or drums, with or without automatic regulation, of the pressure in terms of the speed, is more generally used. The electromagnetic brake remains an interesting proposition, at least as a standby brake, in spite of the drawbacks found in service.

VIII.—The use of special metals (aluminium, high-tensile steels, such as Stainless, and special steels, such as Corten) has not resulted in such large weight savings as would be expected from the relative specific weights or tensile strengths.

Most railways therefore still prefer carbon steel; some railways, however, use special steels in new stock to strengthen the body against shock, in addition to lightening it to some extent.

IX.—Bogie railcars are used even on secondary lines for comfort and steadiness at high speeds, in place of four-wheeled railcars which only survive in the case of very small units.

As regards the bogies themselves, experience has shown that the combination of laminated and coiled springs, completed by a reasonable use of indiarubber, gives the greatest comfort. Up to the present time, any additional comfort due to the use of elastic wheels is not in proportion to the additional maintenance cost involved.

The suppression of noise is at least of equal importance for comfort.

Ventilation is also a matter of great moment. Some companies have gone so far as to consider air conditioning throughout the year, in order to give the greatest possible comfort.

X.—There is a tendency in all countries to increase the

capacity of railcars with a desire to be able to vary the capacity according to traffic requirements. Many companies are consequently now using either multiple-unit sets, or cars coupled together or to trailers.

In multiple units, articulated bogies are generally used and give the maximum of comfort and steadiness. The use of ordinary bogies in place of articulated bogies, however, enables the set to be made longer and overcomes the difficulties encountered when taking out articulated bogies for repairs or as the result of some incident or other.

XI.—In view of the valuable conclusions come to in several countries through using the Ferrand-Rousselet method of calculating the characteristic constants of railcars, this method should be used by the largest possible number of railways to enable them to compare their modern railcars.

XII.—Experience shows that the essential factors in railcar costs are the maintenance costs and the amortisation charges. All companies are endeavouring to reduce their maintenance costs at the present time, even if it means some increase in fuel costs.

In connection with the amortisation charges, any special fixed equipment which may be necessary has to be taken into account; savings can be effected by improving the conditions under which railcars are operated, and by the training and specialisation of the staff.

In many countries, the cost of the railcar-mile with many types of railcars is considered at the present time to be one half or even one third that of the steam trains previously working the same service.

This last finding shows the great value of railcars and the desirability of dealing with the question again at the next Congress, with special attention to the three points in connection with which progress might be made in the near future, namely: transmissions and brakes, comparative test methods, detailed investigation into costs and the methods by which they may be reduced.

Question II.—World Crisis and Railways

The terms of reference upon which reports were called for were as follow:—

The world crisis and railways and the effects of the crisis on railway working; measures taken to lessen the effects of the crisis; competition or collaboration between railway and road transport; a forecast of the future; new ideas as to passenger transport, such as light, quick trains between large towns and between large and small towns, running at regular intervals.

Two reports covering the main line railways of all countries except those affiliated to the International Railway Union were presented by Mr. Ashton Davies. The main line railways affiliated to the I.R.U. were the subject of two reports by Dr. Cottier and Herr von Beck. Messrs. E. La Valle and E. Mellini reported upon secondary railways in countries of Southern Europe and their colonies, and finally a special report was presented by Herr von Beck. These reports have all been published in the Bulletin of the International Railway Congress Association, and summaries of those by Mr. Ashton Davies were published in THE RAILWAY GAZETTE of June 29, 1934, and those of Messrs. La Valle and Mellini in our issue of January 25, 1935.

The summary adopted by the plenary meeting of July 6 reads as follows:—

Great efforts have been made by the railways to meet the difficulties resulting from the world crisis. Some slight improvement in the economic situation is now observable, although it is not general and possibly is only temporary. The railways are particularly sensitive to the effects of the crisis and of competition, because of the regulations and requirements imposed upon them as public services.

The position of the railways is still imperilled by free or little regulated road competition, which is harmful to trade and industry, and the public well-being.

The burdens laid on the railways must be lightened, and the legal requirements imposed on them made more flexible.

It is absolutely essential that road transport be subjected to such regulations as will result in reasonable equality between the two methods of transport, having regard to their technical differences and the national interests.

PARIS CONGRESS, 1937

The 13th Session of the International Railway Congress Association is to be held in Paris in May-June, 1937, in order to make it coincide with the International Exhibition to be held in Paris at that time. The following is the list of questions selected for the agenda:—

1st Section: Way and Works

I.—The construction of modern track to carry heavy loads at high speeds, and methods of modernising old track for such loads and speeds.

Facing points which can be taken at high speeds.

II.—Use of welding:

(1) To obtain extra-long rails.

(2) In manufacturing and repairing points and crossings.

(*a*) Results obtained by using extra-long rails.

Methods used to ensure safe expansion of the rails and anchoring of the track.

(*b*) Technical and financial results shown by welding points and crossings.

III.—Methodical and periodical maintenance of:

(1) Metal bridges.

(2) Signals.

(3) Metal supports carrying the contact wire on electric railways.

Organisation.—Working methods.—Materials used.

2nd Section: Locomotives and Rolling Stock

IV.—Evolution of the rail motor car as regards its construction, and special investigation into the transmission and brake questions.

Comparative methods of testing railcars.

Detailed investigation into the costs of railcars and the methods of reducing them.

V.—Recent improvements in steam locomotives of the usual type and tests of new designs (high-pressure reciprocating locomotives and turbine locomotives) as regards construction, quality of materials used, efficiency, working conditions, maintenance and financial results.

Testing locomotives at locomotive experimental stations, and in service with dynamometer cars and brake locomotives.

VI.—Methods and devices used, in connection with electric traction, to save current between the supply side of the power station and the driving wheels (feeders, substations, tractors), and in particular the use of mercury rectifiers.

3rd Section: Working

VII.—Economical operation of the main line systems' secondary lines.

Various methods adopted to adjust the operating facilities, safety measures, and station organisation to the volume of traffic.

VIII.—Application of rational organisation (planning) to the transport of goods, especially in connection with:

(1) The functions and internal working of shunting yards;

(2) The provision of inter-yard connections;

(3) The estimation of the probable traffic to be dealt with, and the provision of the trains required;

(4) The information to be given to the consignees;

(5) The acceleration of the turn-round of empty stock;

(6) The use of containers and rail-road wagons.

IX.—Results obtained from the automatic and distant operation of signals and points, and from locomotive cab signals.

4th Section: General

X.—Effects of the world crisis and road competition on the railway position. Corresponding changes in railway commercial policy.

XI.—Selection, orientation, and instruction of railway staff.

5th Section: Light Railways and Colonial Railways

XII.—Co-ordination of operation as between main-line and light railways.

XIII.—Specifications for the fixed plant of railways with light traffic, intended to prevent the use of unnecessarily expensive track equipment, and generally to give economical working.

XUM

KEEPING LOCOMOTIVE BOILER TUBES CLEAN

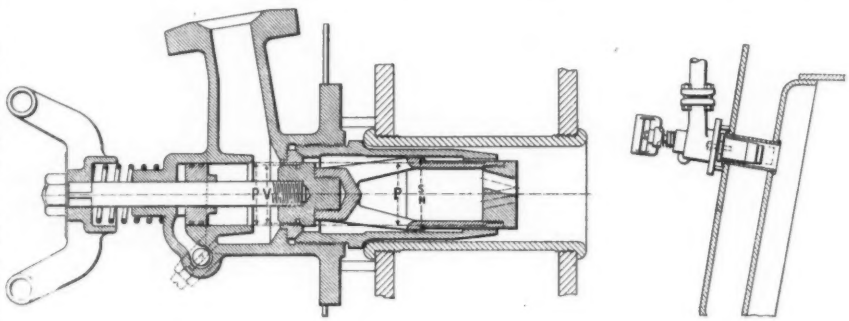
A perfected soot blower which is being fitted to many recently built locomotives

THOSE with experience of locomotive running and maintenance problems will not need to be reminded of the necessity of keeping the boiler and superheater tubes as clean as possible. Scale on the outside and sooty deposits on the inside of the tubes have a noticeably deleterious effect on the efficiency of the latter and their work of transferring heat to the surrounding water, so that in course of time a considerable reduction of the effective heating surface of the boiler is automatically brought about. Treatment of the boiler feed water either by external or internal means adequately deals with the scale question, and under modern conditions of locomotive operation it has become equally essential that the interior surfaces of the tubes should be kept free from clogging matter deposited there by the gases on their way from the firebox to the chimney.

Appliances of various kinds have been devised and used for this purpose both in this country and abroad. Details of the latest soot cleaner, manufactured by the Diamond Blower Co. Ltd. at its new factory, Brent Crescent, North Circular Road, London, N.W.10, and known as Model 1934, are shown in the accompanying illustrations. The cleaner is permanently installed through the water space at the back of the firebox, and permits of easy and quick operation whilst the locomotive is working, ensuring maximum efficiency whilst running and the elimination of cleaning by hand in the sheds. The new model embodies novel and exclusive features reflected in ease and rapidity of operation, together with the greatest possible economy in steam. The makers have satisfied themselves that jets from a plain orifice are superior to a system of fan-shaped jets, because in practice such jets tend to deliver the major portion of the steam straight ahead, where it is least effective.

In the blower illustrated the shank carries a nozzle accommodating three carefully machined orifices designed to direct the steam jets at the required angles. The jets are varied in size, the outer one, which deals with the greater number of tubes, being the largest, whilst the calculated reduction of the others ensures an even distribution over the whole bank of tubes. A question which arises in the design of apparatus of this kind concerns the valve. Obviously the best valve is one which allows minimum waste of steam. If it is slow to operate, steam wastage is correspondingly high, as any steam passing through the blower during the opening and closing of the valve is practically all lost. In order to reduce this loss to a minimum the Model 1934 is fitted with a valve having a snap-over action, as explained by reference to the drawing reproduced herewith. Taking first the question of the unbalanced thrust when the valve is closed; it will be noticed that the pressure area P of the piston is greater than V of the valve, so that the latter is held closed by the steam pressure assisted by the spring, and the out-of-balance thrust is definitely rearwards. A sharp push on the operating handle overcomes this out-of-balance and moves the piston shaft forward, and as the steam pressure assists the movement, the valve opens practically instantaneously. When the working position of the nozzle is reached, the greater pressure area is now that of the shank and nozzle SN, and the out-of-balance thrust definitely forward. One turn only with the handle, taking about 20 seconds, is all that is required for the complete cleaning operation, and when the driver desires to close the valve its equally rapid movement is ensured by giving a sharp pull on the operating handle.

The valve protector, which fills the bore of the valve seat when the valve is closed, also serves as a steam saving device, as no large quantity of steam is able to reach the nozzle until the protector portion is moved forward and the nozzle reaches practically its working position. This feature, combined with the rapid action of the valve, makes it possible to operate this new model cleaner effectively in less time than would be taken with a screw-actuated valve to deliver full pressure of steam to the nozzle. The steam wastage due to slow valve action could easily be as much as the quantity of steam required for the entire cleaning operation by the Diamond Model 1934 Cleaner.



Arrangement of quick-action valve in Diamond soot blower

There are other refinements worthy of attention in the design of this cleaner, as, for instance, the unique ejector which performs the important duty of clearing the head of any water. This is so positioned that its discharge is used to create a partial vacuum in the chamber behind the piston, and so obviates the need for a packing gland on the operating shaft. The ejector also acts as a vacuum breaker, preventing furnace gases from being drawn into the blower head and piping when the main steam is shut off.

In a brochure describing the blower the manufacturers summarise its advantages as follows:—

(1) Valve instantaneous in action. (2) Steam jets definitely directed to the best advantage. (3) No packing required. (4) No waste of steam. (5) Perfect drainage. (6) Quick and simple operation. (7) Vacuum breaker provided. (8) No internal corrosion will occur. (9) Nothing to get out of order.

An instruction plate is fixed to each cleaner giving all essential directions for operating it.

The 4-8-2 type locomotives built for the South African Railways by the North British Locomotive Co. Ltd. to the number of fifty, are all of them fitted with the Diamond Model 1934 cleaner. An illustrated article dealing with these locomotives appeared on pages 794-801 of THE RAILWAY GAZETTE for November 16, 1934.

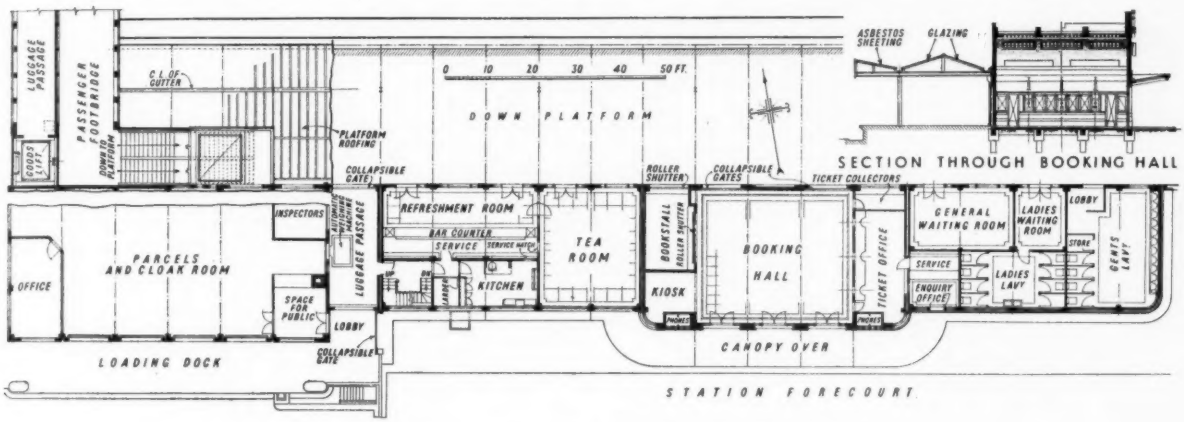
NEW SOUTHAMPTON CENTRAL STATION, SOUTHERN RAILWAY

Owing to the growth of through traffic on the main Bournemouth line, as well as that arising from the great docks extension at Southampton, the West station has been rebuilt and renamed Southampton Central

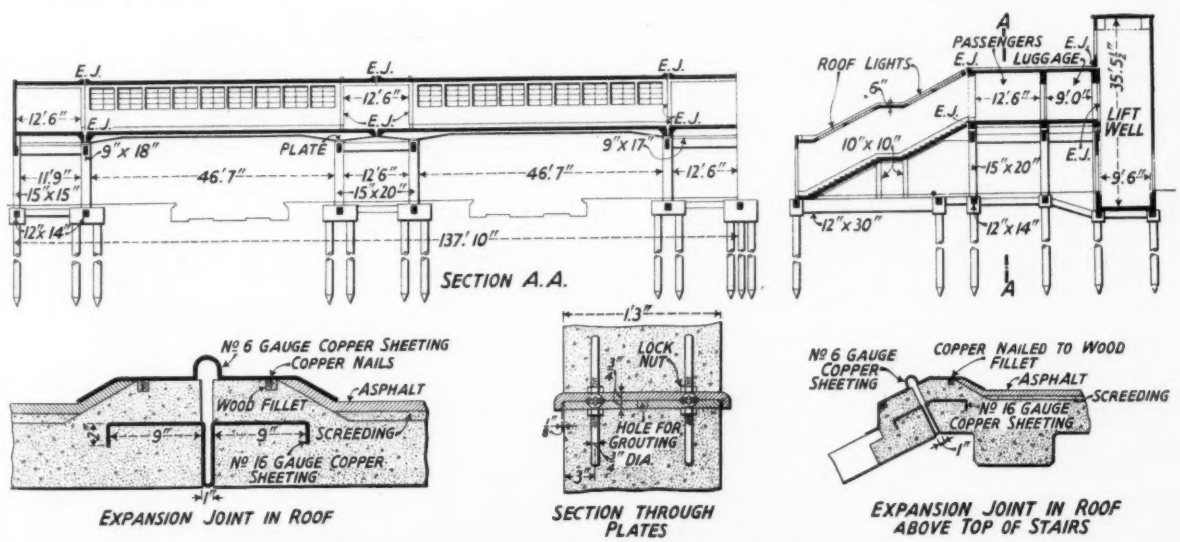
WHEN the London & Southampton Railway was opened in 1839 from Winchester (it was opened throughout in the following year), the terminus was adjacent to the Southampton docks. Eight years later a branch was built westwards from the terminus station, and, after passing under the high part of the town in tunnel, reached a station then named Blechynden (later Southampton West). This line was continued westwards, via Brockenhurst, Ringwood, and Wimborne, to Hamworthy (for Poole) and Dorchester. Later a line was built on the north side of Poole Harbour from New Poole junction (now Broadstone junction) through Poole to Bournemouth West.

As traffic to the west developed, a spur line was built at Northam enabling trains to run direct from London without entering and reversing at the Southampton terminus station. This spur was opened about 1859. In 1862 a branch was constructed from Ringwood to Christchurch, and extended in 1870 to Bournemouth East. Eventually, in 1888, a direct line was opened between Brockenhurst and Christchurch; Bournemouth East and Bournemouth West were joined by a spur line, and a new passenger station was provided on the west side of Holdenhurst Road, now known as Bournemouth Central, the old East station being converted into a goods station.

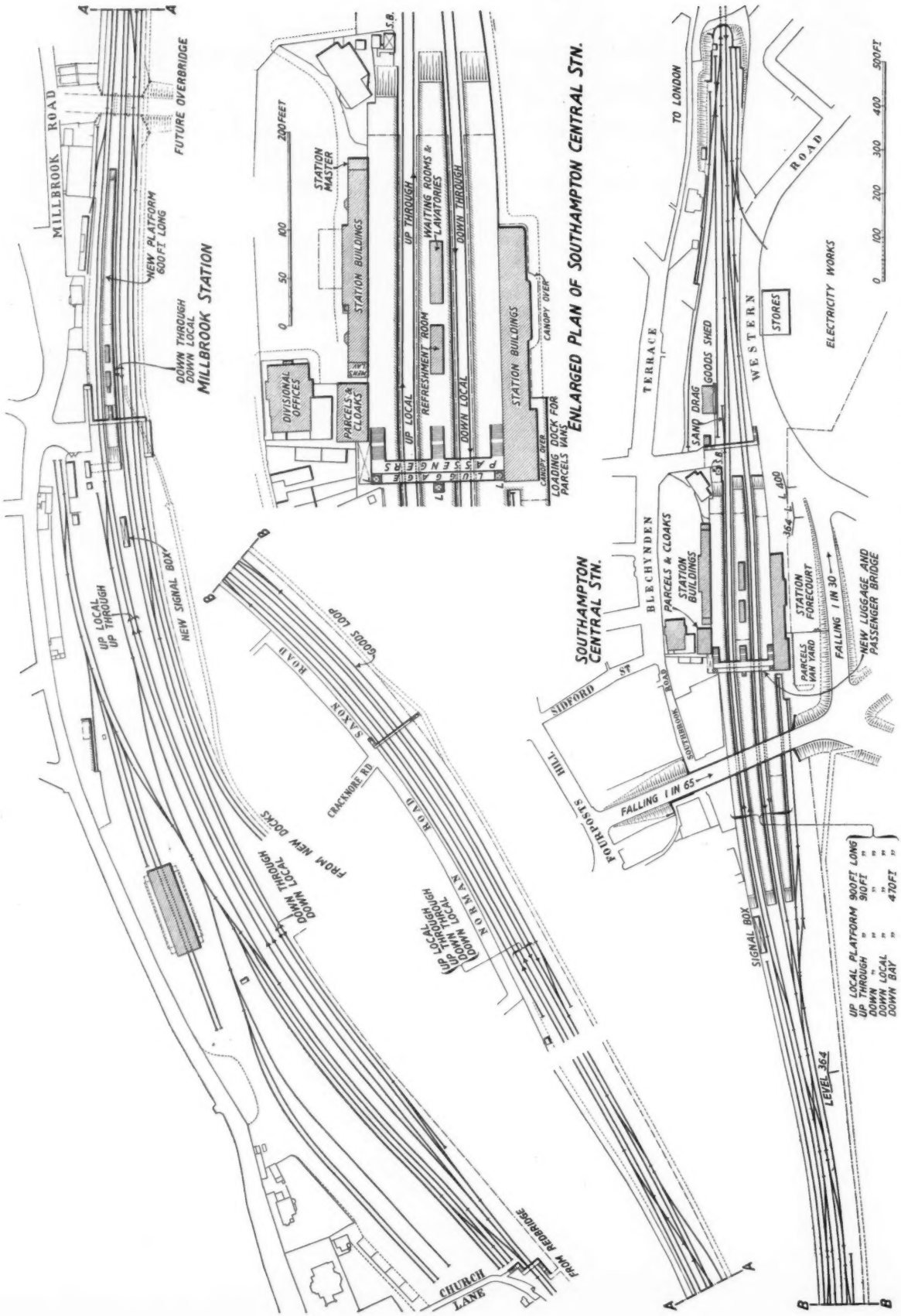
Southampton West steadily grew in importance until



General arrangement of new down platform and buildings



Details of reinforced concrete foot and luggage bridge



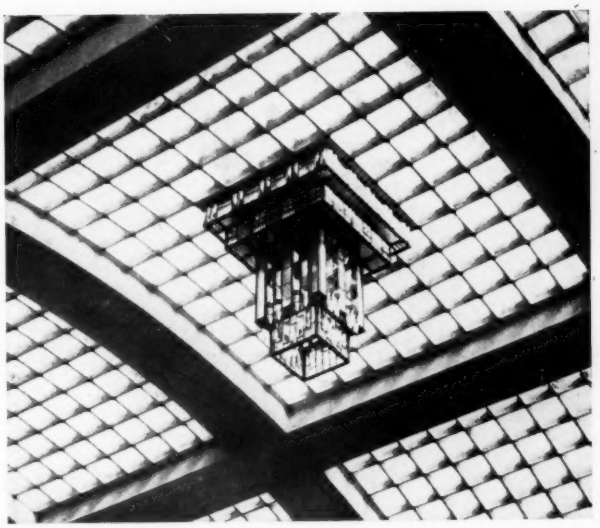
General plan of the new Southampton Central and Millbrook stations and the widened lines

it became necessary about 1895 to rebuild the station on more commodious lines. The area on which the old station was situated between the tunnel mouth and Blechynden level crossing being inadequate, a site was therefore chosen west of the level crossing for the new station, which necessitated a certain amount of land being reclaimed from the adjacent Southampton Water, and the building of a new sea wall. This station comprised up and down main line platforms, a down bay platform, and, for that period, commodious and imposing station buildings with a conspicuous clock tower. These buildings are situated on the up side and are in course of complete renovation. The old up main platform becomes the up local, and the old down platform has been converted into an island to accommodate the up and down through lines. The old buildngs on that side have been removed and replaced by up-to-date accommodation, including waiting and refreshment rooms. A new down platform, with a down bay at the west end, has been built on part of the land reclaimed for the Docks extension, and modern and commodious buildings have been erected upon it, together with a new station approach paved with reinforced concrete. These buildings comprise a spacious booking hall, booking office, waiting rooms, buffet and tea rooms, parcels office and other accommodation. The whole of the station is electrically lighted and the new buildings are centrally heated on the panel heating system.

To eliminate the level crossing a new concrete and steel overbridge has been built spanning the station at its western end. The old station footbridge has been removed, and a new one, of reinforced concrete, to accommodate separately both passengers and luggage, has been provided. Three luggage lifts give access from the three platforms to the bridge.

All the buildings and the platform walls on the reclaimed land are founded on piles of the West Rotinoff type. During the driving of these piles no fewer than five different sea walls had to be negotiated. The concrete road, and foot and luggage, bridges are shown in general design by our drawings. Special expansion joints, also illustrated, were provided in the luggage and footbridge.

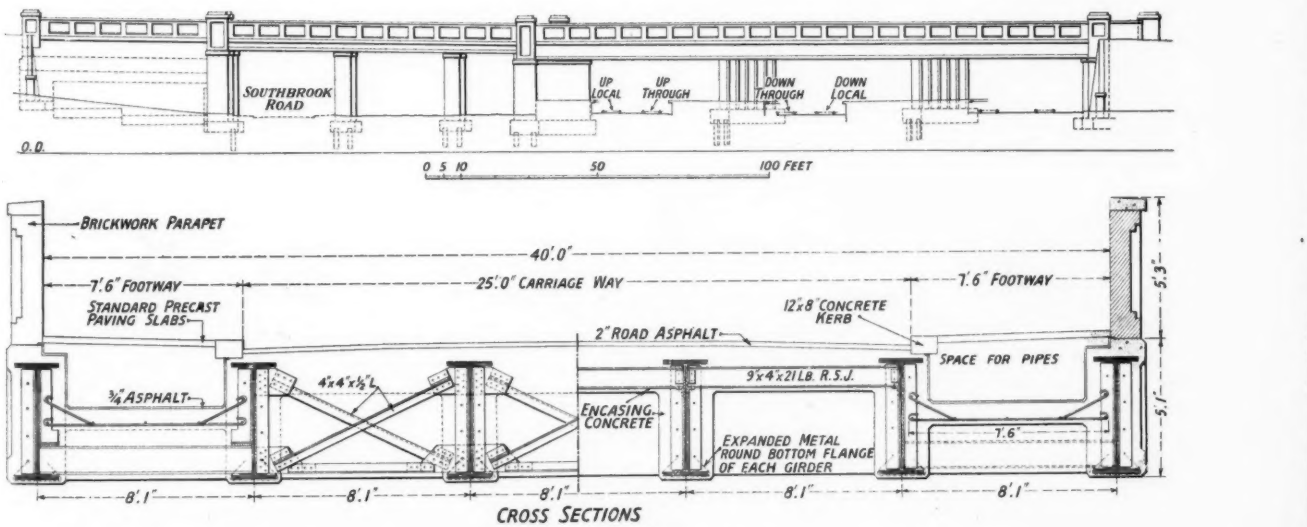
The line has been quadrupled from Southampton Central through Millbrook (which station has been rebuilt as an island platform with a passimeter booking office) to a point about half a mile beyond it. Immediately east of Millbrook there are two additional lines which branch off by a 9-chain curve just beyond the station to the Docks extension. That part of the new platform at Millbrook which encroaches on reclaimed land is founded on Vibro piles, as are also the new signal box and the new precast concrete footbridge giving access to the platform from both sides of the line.



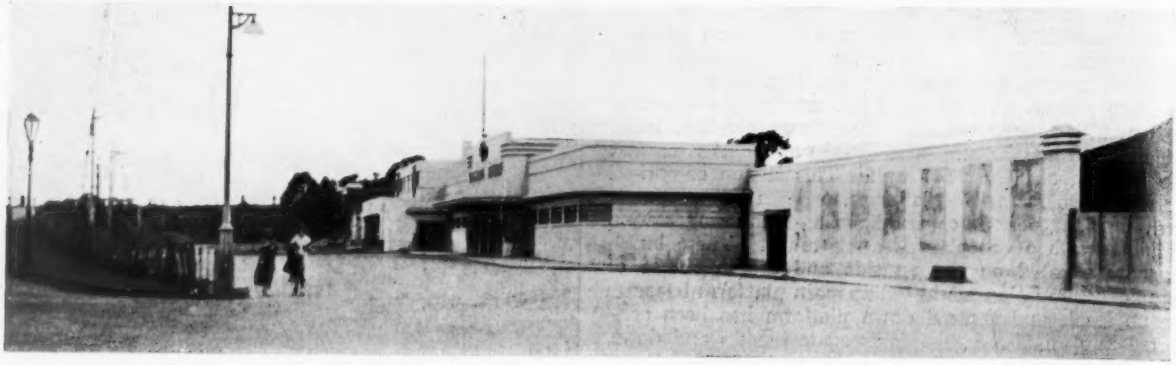
Glasscrete roof of new booking hall

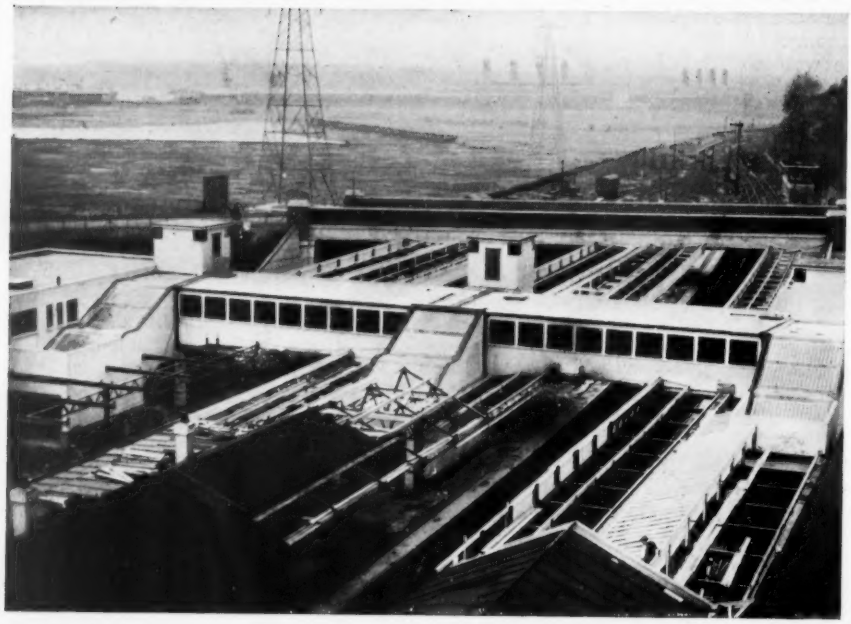
Between Southampton Central and Millbrook a former reverse curve has been straightened and a new down goods loop provided. A new light steel footbridge has been erected across the line at Cracknore Road, and this is carried on Prestcore piles.

The whole of the signalling has been renewed and is now controlled from two signal boxes, Southampton Central (situated on the up side just west of the station) and Millbrook. All the signals are manually worked and the points within range of the boxes are also hand operated, those beyond the limits being worked by electric motors.



Details of new steel and concrete overbridge at Southampton Central





Above: The new down side station buildings and approach

Left: General view of the new station under construction, showing reclaimed land, and ships alongside the new Docks extension

Below: The new down platform and foot and luggage bridge

THE NEW SOUTHAMPTON CENTRAL STATION, SOUTHERN RAILWAY

New station and concrete footbridge at Millbrook, looking east

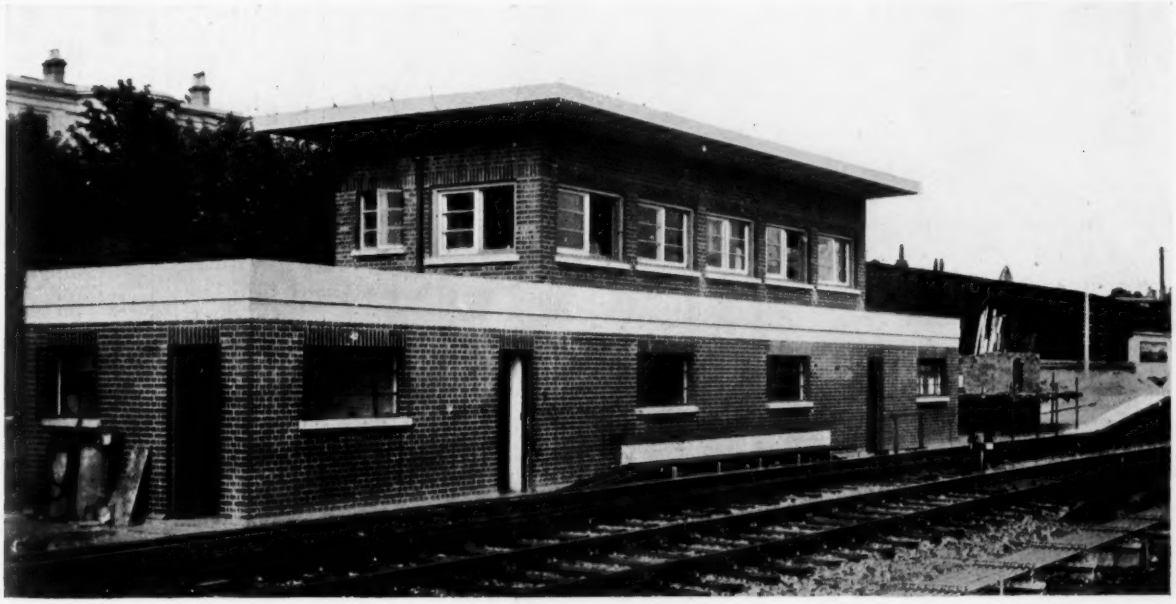
Both signal boxes are of modern design and contain illuminated diagrams. Concealed lighting illuminates the boxes at night.

The principal contractors employed on the work are as follow:—

Sir Robert McAlpine & Sons	New road overbridge at Southampton Central.
Trollope & Colls Limited ..	New down side buildings, platform roof glazing, and Millbrook passimeter.
Rice & Son	Island platform buildings; reinforced concrete footbridge.
West's Rotinoff Piling & Construction Co. Ltd.	Piling at Southampton Central.
John Gill (Contractors) Limited	Vibro piling at Millbrook; Prestcore piling at Cracknore Road.
Horseley Bridge & Engineering Co. Ltd. (Incorporating Thomas Piggott & Co. Ltd.)	Platform roof steelwork at Southampton Central.
Archibald D. Dawnay & Sons Ltd.	Light steel footbridge at Cracknore Road, and steelwork to roofing at Millbrook station.

A considerable portion of the work, including the whole of the permanent way and signalling, the platforms, the concrete panel fencing, road works in the station approach, amongst others, have been carried out by the company's own staff.

The works have been designed and carried out under the supervision of the company's Chief Engineer, Mr. George Ellson, O.B.E., M.Inst.C.E., to whom we are indebted for the foregoing information and for assistance in the preparation of the drawings reproduced.



Southampton Central signal box

XUM

New 2-8-0 + 0-8-2 Kitson-Meyer locomotives for the National Railways of Colombia

(See article on opposite page)

NEW 2-8-0 + 0-8-2 KITSON-MEYER LOCOMOTIVES FOR SOUTH AMERICA

Two well-known British firms of locomotive builders have co-operated in the design and construction of these interesting locomotives for the National Railways of Colombia

TWO locomotives of the Kitson-Meyer type have recently been supplied for service on the Girardot-Tolima-Huila section of the National Railways of Colombia. They afford an interesting example of co-operation between two well-known British firms of locomotive builders, having been designed by Kitson & Co. Ltd., of Leeds, and constructed at the works of Robert Stephenson & Co. Ltd., of Darlington.

The general design is of the well-known Kitson-Meyer type, which for many years has been successfully identified with railway working in Colombia. The first engines of the type built by Kitson and Company for this railway in 1909 had a tractive effort of 27,600 lb. This has gradually increased in the intermediate engines until in the present design it has reached 58,500 lb. at 85 per cent. of the boiler pressure.

The engines can negotiate curves of 72 m. (236 ft.) radius and will haul a load of 340 tons up the maximum grade of 4 per cent. (1 in 25). In working order the engine weighs 130 tons, the water capacity being 4,000 gallons and liquid fuel capacity 1,100 gallons. Although designed primarily for burning fuel oil, they are so arranged as to be readily convertible for coal, the fuel tank being detachable.

The following are the main particulars :—

Cylinders (4), dia.	17¾ in.
Stroke	20 in.
Coupled wheels, dia.	3 ft. 1½ in.
Bogie wheels, dia.	2 ft. 2 in.
Rigid wheelbase of each bogie	10 ft. 10½ in.
Total wheelbase of engine	53 ft. 11 in.
Total length over buffers	66 ft. 4¾ in.
Boiler heating surface—	
Firebox	205 sq. ft.
Tubes	2,362 ,,
Superheater	640 ,,
Total	3,207 ,,
Grate area	51 sq. ft.
Working pressure	205 lb. per sq. in.

The general equipment includes: Crosby type safety valves, Monitor injectors, one eight-feed Detroit hydrostatic lubricator with sight filling glass, a two-feed Detroit lubricator feeding the Westinghouse Duplex air compressor, Everlasting blow-off cock, Graham-White sanders, Franklyn automatic grease cellars to the coupled wheel axleboxes, Pyle National electric lighting, Alliance automatic couplers with the Waugh type of draft gear, and Alco reverse gear. A repression brake is also incorporated whereby the cylinders function as a pneumatic brake, relieving the brake shoes on the down grades.

GENERAL ELECTRIC SOUND AMPLIFIERS AT EUSTON, L.M.S.R.

AMONG the most extensive and successful installations of sound reproduction for railway traffic control is the system installed this summer at Euston station, L.M.S.R., by the General Electric Co. Ltd. This system is the combined product of the specialised knowledge of G.E.C. sound experts, and the practical experience of the L.M.S. engineers.

Over thirty loudspeaker points were chosen to give complete acoustic cover to every part of the station where the train announcements should be heard—booking office, inquiry office, arrival platforms, departure platforms, all had their special difficulties, and all were successfully overcome. The main amplifier itself was housed in a specially constructed announcing room. The equipment consists of two complete 90-watt amplifying channels with two microphones. Provision is made for two announcers to work simultaneously, each controlling any required number of the loudspeaker points, or alternatively, either announcer can take complete charge of the whole system if required.

The amplifiers are products of the G.E.C. sound laboratory, and use two DA.100 Osram valves in low-loading push-pull for each channel. Moving-coil microphones of a new G.E.C. pattern are used by the announcers, who are given a very flexible control over the working of the system by means of the panel illustrated herewith.

Convincing proof of the utility of this installation was afforded last August Bank Holiday, particularly on the Friday night when the traffic to Scotland was especially heavy. The Royal Highlander alone was running in seven parts, but the constant announcements guided passengers to their appropriate platforms without necessitating innumerable questions to the staff.

G.E.C. control panel for sound amplifiers at Euston station

XUM

Modern U.S.A. Railway Passenger Accommodation

(*See editorial note on page* 406)

Coach of the "400," Chicago and North Western Railway

Dining car of the Hiawatha, Chicago, Milwaukee, St. Paul and Pacific Railroad

Lounge coach on the Hiawatha

The men's lounge on the Hiawatha is a distinct improvement on traditional American smoking accommodation

Toilet on the 20th Century Limited, New York Central System

RAILWAY NEWS SECTION

PERSONAL

Sir Josiah Stamp, Chairman and President of the Executive, L.M.S.R., has been elected President of the British Association for 1936.

Mr. A. Kuit, Chief Railway Commissioner, South African Railways and Harbours Board, has been appointed for a further period of five years with effect from November, 1935. Mr. Kuit was first appointed to the railway board in 1925 and has served continuously on the board for ten years.

Senator Huey Pierce Long, Senator of Louisiana, whose death on Tuesday followed a revolver attack by a political opponent on the previous day, was born at Winnfield, Louisiana, on August 30, 1893, and there set up in practice as a lawyer 21 years later. When the U.S.A. entered the war in 1917, he took up local politics and in the following year was elected Railroad Commissioner from the North Louisiana district. After he became Governor of his State in 1928, he built thousands of miles of highway, but otherwise did not continue activities in connection with transport.

SOUTH AFRICAN STAFF CHANGES

The following changes and appointments have been made by the South African Railways and Harbours Board.

Mr. J. P. McMagh, Goods and Passenger Agent, Cape Town, to be Superintendent (Operating and Commercial), Bloemfontein.

Mr. S. Watson, Assistant Port Goods Superintendent, Cape Town, to be Superintendent (Operating and Commercial), Port Elizabeth.

Mr. W. M. Wills, Assistant Manager, Publicity and Tourist Branch, Johannesburg, to be Goods Superintendent, Kazerne.

Mr. S. Pels, Goods and Passenger Agent, Bloemfontein, to be Assistant Manager, Publicity and Tourist Branch.

The late Mr. William Stephen Eyre, a Director of the Nitrate Railways Company, and Deputy-Chairman of the Peruvian Corporation, has left £50,037, of which £47,264 is net personalty.

We regret to announce the death at Glasgow on September 2 of Mr. T. C. Simpson, Assistant to the Commercial Manager (Goods), Scotland, L.M.S.R.

Mr. James McCrea, M.Inst.T., whose appointment as General Manager of the Northern Ireland Road Transport Board we recorded last week, was born in Dromore, County Down, and spent his early business career in the grocery and allied trades. In 1912 he emigrated to Canada, where he became manager of a large retail business in Brandon. For family reasons he returned to Northern Ireland in 1915 to take charge of his father's business, which shortly afterwards was converted into a private limited company, under the title of the J. P. McCrea Co. Ltd., with Mr. McCrea as Managing Director. He began one of the pioneer bus undertakings in Northern Ireland, under the name of Spence's Auto-Service Company, which ran a regular scheduled service between Dromore and Belfast. He was largely responsible for the formation of the Belfast Omnibus Co. Ltd. in April, 1927, and has since been a member of the board of directors. In October, 1928, Mr. McCrea was appointed General Manager, and he has been Managing Director since January, 1930. Mr. McCrea is a member of the Institute of Transport, the Northern Ireland Roads Advisory Committee, the Traffic Advisory Committee, and the Belfast Chamber of Commerce.

Mr. James McCrea, M.Inst.T.,
Appointed General Manager, Northern Ireland Road Transport Board

Sir Hugh Reid, of Belmont, Springburn, Glasgow, Chairman and Chief Managing Director of the North British Locomotive Company, left estate to the value of £246,075. He directed his trustees to divide suitable stocks to the value of £5,000 among such charitable and benevolent institutions in Glasgow and the West of Scotland as they may select. The portrait by Sir William Orpen, R.A., of Sir Hugh in the uniform of the Royal Company of Archers is to be offered as a gift to the Corporation of Glasgow for exhibition in the Kelvingrove Art Galleries.

At the memorial service held on September 4, at St. George's Church, Bickley, for Mr. Robert John Hose, a Director of the Antofagasta (Chili) and Bolivia Railway Company and of the Anglo-South American Bank, the congregation present included Mr. A. W. Bolden, Chairman of the Antofagasta (Chili) and Bolivia Railway Company, Mr. A. G. Bartholomew (and representing Mr. W. E. Wells and Mr. J. A. Goudge), Mr. G. A. R. Cocq, Manager, and Mr. M. J. Beazley, Sub-Manager, of the Anglo-South American Bank.

We regret to record the death at Claremont, Cape Province, at the age of 63, of Major N. K. Prettejohn, who, until his retirement about three years ago, was Resident Engineer of the South African Railways and Harbours Board, with headquarters at Johannesburg. Major Prettejohn was born in South Devon, but spent most of his working life overseas, being engaged on railway construction in Chile and Spain, as well as in South Africa. He claimed to have surveyed over 5,000 miles and to have built about 1,000 miles of railway track. During the Boer War, in which he was decorated with the D.S.O., Major Prettejohn built the Upington (Bechuanaland) to Prieska (Cape Province) line. In the war of 1914-19, he was engaged in railway construction in Mesopotamia and South-West Africa.

THE GERMAN RAILWAY CENTENARY EXHIBITION.—Since its opening in July more than 150,000 visitors have seen the exhibition in Nuremberg celebrating the centenary of the German railways. We are officially informed that it will remain open until October 13.

XUM

First train to leave the Baltimore and Ohio station at Mt. Clare for Washington. This line, the first to enter the U.S.A. capital, was opened on August 25, 1835

A 2-6-4 goods locomotive of the old Metropolitan Railway in the "London Transport" livery which is now being adopted

Gairlochy station on the Fort Augustus branch, L.N.E.R., which has been converted into a rambler's hostel now that passenger train services are withdrawn

The presentation of prizes at the final competition for the annual Golf championship of the L.M.S.R. *(See page 431)*

Labour Regulations affecting Railways in Argentina

(*From our special correspondent in Argentina*)

On August 10, the President of the Republic signed a decree authorising the establishment of new labour regulations governing hours of duty of the railway staff, to come into force on November 1. This date has been fixed to coincide with the change-over from the winter to the summer timetable, and also to allow time to clear up any points the precise meaning and application of which might be slightly obscure.

It will be remembered that, as reported in THE RAILWAY GAZETTE of March 8, 1935, the Government Railway Board was encharged by the President (as per Clause 8 of his Award on wages reduction, *vide* THE RAILWAY GAZETTE of October 26, November 16, 1934, and January 4, 1935), to make a report on modifications in the regulations of the hours of duty of the railway employees, as also other methods tending to a better utilisation of staff and services and, consequently, more economical working. For the purpose of carrying this out, meetings were held in Government House, under the presidency of a Government representative, between the companies and the men's representatives. Once each side had expounded its views on the subject, the matter was referred to the Railway Board, in order that it could submit its report, and it is on this report that the Presidential decree is based.

An analysis of the provisions of the award now published shows that the modifications drawn up by the railways have been taken as the basis for the study of the question, the reasonableness of the companies' views and the soundness of their arguments being vindicated by the fact that practically all the proposals put forward by them have been adopted.

The Presidential Award is embodied in a voluminous document comprising 53 clauses, some of which are subdivided into various subsections. A supplement to the decree contains a number of instructions to the Ministry of Public Works in regard to the undernoted points which are outside the scope of the eight-hour law, the amended application of which in the different departments and grades of the railway service is mainly dealt with in the decree, viz. (*a*) general station assistants; (*b*) reclassification of services ("escalafone"); (*c*) reduction of train staff; and (*d*) transfer of surplus staff.

The regulations relating to each of these questions may be summarised as follows:—

(*a*) *General station assistants*: These may be employed at stations where the traffic movement does not require the services of two assistants of the 4th category during a working day. At such stations the companies may employ general station assistants with the obligation to perform all duties necessary in a station, *i.e.*, pertaining to clerical or labour staff. The monthly salaries of the general station assistants will be those proposed by the Railway Assessory Committee, viz., $120 to $150 on broad gauge lines, and from $115 to $135 on narrow-gauge systems. The vacant posts shall be published in the same form as at present, it being optional for the staff to apply for them or not. Each case shall be submitted to the National Railway Board by the company concerned.

(*b*) *Reclassification of services*: The Award points out that the Government decree issued in November, 1931, which debarred the companies from dismissing surplus staff, did not, however, prohibit a reclassification of the services, in so far as the existing agreements between the railways and their employees remain in force. With a view to a better utilisation of the staff, the National Railway Board, with the consent of the companies and their employees, shall submit for the Government's consideration a scheme for the reclassification of the posts established in the "escalafones" of station assistants, clerks and controllers, bearing in mind, however, that this does not involve the dismissal of employees or workmen who, at the date of this decree, are in the company's service, or the reduction of their category or rates of pay, or the forfeiture of their right to such increases in pay as are established by the existing "escalafones" in each class. Within a period not exceeding 4 months, the Railway Board shall, together with the representatives of the companies and the employees, study the question of reclassification of posts, and if, at the end of this period, no agreement has been reached, the Railway Board shall make recommendations regarding the form in which such reclassification shall be carried out. The working days of the station and running shed staff are to be classified in accordance with the respective provisions of Law No. 11,544.

(*c*) *Reduction of train staff*: The National Railway Board's circulars Nos. 23 (1918) and 31 (1930), establishing the number of guards to be employed on trains, have been cancelled, each company being left free to make its own arrangements in this connection in accordance with the requirements and characteristics of the service. When, however, the employees consider that one guard on a train is not sufficient, they shall have the right of appeal to the Railway Board, whose decision in the matter shall be final.

(*d*) *Transfer of surplus staff to other railways*. The National Railway Board shall fix a period not exceeding four months for the companies and their employees and workmen to come to an agreement regarding the transfer of surplus staff from one company to another where there are vacancies, whilst the decree of November, 1931, is in operation. At the expiration of this period, if no agreement on the matter has been reached, and registered by the Railway Board, the latter shall propose the form in which such transfers shall be effected, taking into account the following considerations:—

(1) An employee shall be transferred from one company to another in a provisional and not in a permanent capacity, his salary being paid by the company to which he is transferred, without, however, forfeiting his rights in regard to category and benefits as an employee of his former company, while retaining the right to return to the latter, if suitable vacancies should occur. After a provisional period to be fixed by the Railway Board (which in no case may be less than 18 months), the employee shall remain permanently with the new company.

(2) The National Railway Board shall establish the circumstances in which an employee may justifiably refuse to accept his transfer to another company.

(3) Those companies which have surplus employees in their service shall defray, in every case, all the expenses incurred by the transfer of such employees, in accordance with the provisions of the respective "escalafones," as well as those arising from the retransfer of such staff to the original company.

(4) The National Railway Board shall establish the measures to be applied to any employee who, without justifiable reason, refuses to be transferred. These may be, amongst others: being placed last on the list of employees who will fill vacancies in his old company; reduction of the percentage of the salary he receives as surplus staff, or suspension for a certain period without salary.

Within two months after the expiry of the period fixed for the companies and the staff to come to agreements on this question, the National Railway Board shall submit to the Government their proposals for regulating the transfer of surplus staff.

Eight-hour Day Law: General Provisions

Art. 1. The normal duration of actual work, either on continuous or intermittent duty, shall be 8 hours a day or 48 hours a week for the ordinary service of railway employees in the Republic.

Art. 2 (*a*) Night duty shall not exceed seven hours of actual work, and shall be understood to be that usually and entirely carried out between 9 p.m. and 6 a.m.

(*b*) When the working day extends beyond 9 p.m. or starts before 6 a.m., each hour worked during this period shall be computed as 68 minutes.

(*c*) Actual night work shall not be considered as such, for the purpose of computation established in the preceding clause, when the hours of night service are less than 56 in a cycle of 21 days, but in the event of this limit being reached, both the hours comprised therein as also those in excess thereof shall be computed in the abovementioned form.

Art. 3. The Executive Power shall decide on its own initiative or at the request of the parties concerned what are to be regarded as insalubrious

XUM

places within the provisions of the working day of six hours a day or 36 hours per week.

Art. 4. The working day of the staff engaged on intermittent duty may be prolonged to 12 hours, provided the average eight hours a day of actual work on day service or seven hours on night service, within a cycle of 21 days, is not exceeded.

In the case of engine and train staff, the decree stipulates that in a cycle of 21 days as a maximum, the hours of actual work comprised therein may not exceed 144.

The companies are obliged to submit to the Director-General of Railways the diagrams indicating the working hours of their employees, and after being approved these are to be exhibited at the depots and stations. Such diagrams shall be on view for the train staff to see not less than 10 days before they come into force, and they are required to be drawn up in such a way as to alternate day and night work. If, for any unforeseen reason, the diagrams are cancelled, the staff affected may be employed on other work, provided the rules governing the maximum working hours and minimum rests are not infringed.

Other clauses relate to the working regulations for steam engine staff; electric train conductors; train guards; luggage guards; sleeping car attendants; staff of dining cars and restaurants; station and running shed staff; telegraph line revisers; chauffeurs of inspection cars; coach cleaners; vehicle revisers; firemen for stationary boilers; engine-cleaners; permanent way gang cooks and labourers, &c., &c., the aim in all cases being to obtain the maximum efficiency and output of work attainable without encroaching on the basic principles which govern the eight-hour law.

Census of Railway Employees

As noted last week a return has been issued showing (1) the number of staff employed by the railway companies of Great Britain, the Railway Clearing House, and on the railway undertakings of the London Passenger Transport Board during the week ended March 9, 1935, and (2) a comparison of the rates of pay and average weekly salary or wage of, and average weekly payments to, certain selected grades during the weeks ended March 9, 1935, and March 10, 1934.

Details are given of the number employed in each of the principal grades by the four amalgamated companies, certain committees, London Transport, and the Clearing House, with totals for each undertaking and for Great Britain. Male and female employees are shown separately, and, with the exception of staff not employed directly, *e.g.*, staff employed by contractors, all persons in the service of the railway undertakings mentioned during the week of the census are taken into account. The figures represent the number of staff receiving salaries or wages for the full week combined with the equivalent number of full-time workers in cases where employees were paid for less than the complete week.

The average payments to certain of the adult male staff were shown by the returns received to be as follows:—

	Week ended— March 9, 1935	March 10, 1934
	s. d.	s. d.
Staff entered at salaried rates:—		
Clerical, supervisory, &c., staff (exclusive of officers and of staff entered under ancillary businesses) ...	91 9	89 11
Staff entered at wages rates (excluding staff entered under ancillary businesses):—		
Conciliation staff ...	63 1	62 8
Shop and artisan staff	68 5	67 0

The average payments represent salaries or wages, residual bonus (if any), war wage, piecework payments, tonnage bonus, payments for overtime, Sunday duty, night duty, commuted allowance and any other payments for work performed, but exclude compensation allowance, travelling and out-of-pocket expenses, and meal and lodging allowances. The deductions operating by agreement as from March 28, 1931, were partially restored as from the first full pay following October 1, 1934.

Summary of Total Staff Employed

Name of Company	At March 9, 1935	At March 10, 1934
G.W.R.	95,729	96,642
L.N.E.R.	171,339	169,772
L.M.S.R.	222,220	219,616
Southern	65,008	62,807
Cheshire Lines	4,072	3,962
London Transport ...	14,382	14,220
M. & G.N. Joint ...	2,049	2,079
Railway Clearing House	1,860	1,887
Other companies ...	4,107	4,063

The following table gives the numbers employed in each of the principal grades and in ancillary businesses during the selected week in 1935, with the corresponding numbers for the selected week in 1934:—

Male Staff	1935	1934
Railway Staff:—		
Capstanmen	1,220	1,238
Carters and vanguards	22,572	22,632
Carriage cleaners ...	6,375	6,395
Carriage and wagon examiners	4,232	4,158
Carriage and wagon oilers and greasers	1,833	1,843
Checkers	8,662	8,870
Cranemen	467	484
Crossing-keepers ...	1,308	1,301
Engine cleaners ...	8,285	7,970
Engine drivers and motormen	33,523	33,265
Firemen and assistant motormen	30,663	30,624
Foremen and chargemen	7,002	6,979
Guards—goods ...	13,535	13,311
Guards—passenger ...	7,307	7,308
Hydraulic and pumping engine staff ...	865	922
Labourers	24,029	22,153
Lampmen	1,816	1,834
Loaders, callers off, ropers and sheeters	5,532	5,616
Locomotive shed staff (excluding labourers)	8,877	8,710
Messengers	940	887
Number-takers ...	1,953	1,930
Officers and clerical staff...	62,818	62,334
Permanent-way men	55,017	54,195
Pointsmen	290	290
Police staff:—		
Supervisory grades	151	150
Other grades ...	2,164	2,198
Porters:—		
Goods	13,185	13,717
Passenger	23,809	23,262
Porter guards ...	560	575
Porter signalmen ...	2,134	2,132
Shop and Artisan Staff:		
Supervisory grades	2,559	2,474
Other grades (excluding labourers and watchmen)	94,404	91,937
Shunters	16,341	16,301
Shunt-horse drivers ...	316	313
Signal and telegraph men	5,656	5,638
Signalmen	24,683	25,032
Signal box lads ...	1,547	1,484
Stationmasters, yardmasters, &c. ...	5,218	5,233
Supervisory staff (other than shop and artisan and police)	9,444	9,509
Technical staff ...	3,073	2,775
Ticket collectors ...	3,623	3,665
Traffic control staff ...	1,429	1,414
Watchmen	394	393
Miscellaneous grades	9,899	10,258
Administrative and technical staff (not allocated)	—	1,020
Railway total ...	529,710	524,729
Ancillary Businesses:—		
Canal staff	1,189	1,201
Dock and quay (other than shop and artisan) staff	11,755	11,809
Marine (other than shop and artisan) staff...	4,159	4,211
Marine and dock shop and artisan staff ...	3,596	3,618
Omnibus and passenger road vehicles:—		
Conciliation staff—traffic department	31	33
Hotel, refreshment room, dining car and laundry staff ...	7,593	7,440
Total—Ancillary businesses ...	28,323	28,312
Total — Male staff	558,033	553,041

Female Staff	1935	1934
Railway:—		
Carriage cleaners ...	574	514
Clerical and technical staff...	10,229	9,307
Crossing-keepers ...	1,484	1,560
Office cleaners and charwomen ...	2,725	2,803
Shop and artisan staff	1,105	1,038
Waiting room and lavatory attendants ...	546	545
Miscellaneous grades	430	411
Administrative and technical staff (not allocated)	—	215
Total	17,093	16,393
Ancillary Businesses:—		
Hotel, refreshment room, dining car and laundry staff ...	5,461	5,432
Marine staff	179	182
Total—Female staff	22,733	22,007
GRAND TOTAL—ALL STAFF	580,766	575,048

NOTES AND NEWS

Railway Accident in Turkey.—A collision at Arifie station, in Asiatic Turkey, on the main line from Haidar Pacha to Konia, is reported to have resulted in the deaths of two passengers, and injuries to three others.

Collision near Padua.—A Vienna – Padua express collided head-on with a train travelling in the opposite direction at Noventana late on the night of September 9. Five passengers are reported to have been killed.

All - Night Refreshments at Euston.—For the convenience of travellers by night trains, the L.M.S.R. has arranged for the smoke room, adjoining the first-class refreshment room in the Great Hall at Euston station, to be open all night for the service of refreshments.

Christchurch-Ringwood Branch, Southern Railway.—With the introduction of the winter timetable on September 30, the branch line between Christchurch and Ringwood will be closed. This single-track line was opened on November 13, 1862, and today has 7 passenger trains in each direction and one goods train on each weekday, but no Sunday service. There is one public intermediate station, namely, at Hurn.

Faster Train Across Canada.—Two and a half hours have been cut off the eastbound running time of the Canadian National Railways' Continental Limited, operating from Vancouver to Winnipeg, Toronto, Ottawa, and Montreal. The saving is effected on the run from Vancouver to Winnipeg, and reduces the total time taken to 3 days 12 hours 20 minutes. The faster service allows for a more convenient departure time from Vancouver and Edmonton, while the train continues to make direct connection with trains from the Okanagan Valley, the famous fruit-growing district of British Columbia.

The Bristolian.—On its first regular run, on Monday last, the Bristolian was made up of seven bogie coaches, including a buffet car, and weighed altogether 218 tons. Including a good complement of passengers—an indication that the new train has evidently "caught on"—the total weight would be about 230 tons. Locomotive No. 6000, *King George V*, got away from Paddington rapidly, and was nearly a minute before time at Southall, 9·1 miles out, passed in 10 min. 7 sec. at 74·7 m.p.h. Easier running followed to Didcot, 53·1 miles, passed in 47 min. 23 sec., after which 74·4 m.p.h. was the lowest speed on the rising grades to Swindon, passed in 66 min. 47 sec. (77·3 miles). The highest speed reached was 84·1 m.p.h. near Box, and a very slow approach was made to Bristol, reached dead on time. The train, composed of the same formation, has been hauled daily by *King George V*, and has been punctual or slightly before time on every run, both up and down. Mr. Humphrey Baker, who timed the train in each direction last Monday, testifies to the extremely smooth running.

Fire at Euston Parcels Office, L.M.S.R.—The parcels office on No. 1 platform, Euston, L.M.S.R., was gutted by a fire which broke out at 2 a.m. on Wednesday. All parcels in transit and passengers' luggage were removed from the building by railway staff and firemen, and no delay was caused to inwards parcels traffic arriving during the night.

New Zealand Railway Year.—The gross revenue earned by the New Zealand Government Railways during the year to March 31 was £6,627,928, an increase of £295,217 over the previous year. Expenditure was £5,540,437, an increase of £293,284. Net revenue was thus £1,087,491, an improvement of £1,933. During the year £204,730 was charged against revenue for renewals and £556,357 for depreciation. Interest charges were £2,350,886.

G.W.R. New Works.—In an address last week to the Plymouth Rotary Club, Mr. F. Potter, Principal Assistant to the Superintendent of the Line, Great Western Railway, referred to the fact that his company was endeavouring to obtain financial assistance from the Treasury to carry out a number of important new works on all parts of the company's system, and briefly described certain of the new works contemplated in the West of England. These are referred to in more detail in our opening editorial note.

L.M.S.R. Golf Championship.—The final competition for the 1935 golf championship of the L.M.S.R., which is open to all members of the staff, was played at the Hillside club, Southport, on September 7. The best card was returned by Mr. W. McClelland Martin, junior, of Belfast, who took the "L. F. Rowlandson" Cup and replica. The second prize was won by Mr. B. Smith, of Larne, and the third prize by Mr. A. Wallace, of Troon. The cup and prizes were presented by Mrs. L. F. Rowlandson, who was thanked in a speech by Major H. E. Roberts (District Passenger Manager, Euston). A group at the prizegiving is illustrated on page 428.

Mechanical Timetables for L.N.E.R.—The L.N.E.R. has made arrangements for mechanical timetable machines to be installed on No. 10 platform and in the booking hall at King's Cross station, and in the booking hall at Liverpool Street station. The new timetables will be worked and illuminated by electricity. On pressing the appropriate button, a card is displayed giving particulars of all the train services to the desired destination. If these mechanical timetables prove successful in London, additional machines will probably be installed at the principal provincial stations. Similar machines have already been installed at Southern Railway stations, an illustrated description of these appearing in THE RAILWAY GAZETTE for March 22 last. The machines are being manufactured by Mechanical Informator Limited.

Agreed Charges.—Fifty-five more applications for the approval of agreed charges have been lodged with the Railway Rates Tribunal, as will be seen from the legal notice published on page 434. A copy of each application (1s. post free) may be obtained from Mr. G. Cole Deacon, Secretary, Rates and Charges Committee, 35, Parliament Street, S.W.1. Notices of objection must be filed with the Registrar of the tribunal and a copy of each objection sent to Mr. Cole Deacon on or before October 1.

Closing Broadstone Station, Dublin.—Work is in active progress on the construction of a spur line near Glasnevin Cemetery, Dublin, to link up the Midland section of the Great Southern Railways (formerly the Midland Great Western Railway) with Amiens Street. This will enable Broadstone station to be closed to rail traffic and used entirely as a bus depot for the extensive omnibus department of the Great Southern Railways, which has resulted from the absorption at the end of 1933 by the railway company of the business of the Irish Omnibus Co. Ltd. At present, Broadstone station is shared by road and rail vehicles.

Canadian Railway Loan.—The Dominion Government, according to Reuters, has raised a temporary loan of £4,000,000 in New York, bearing interest at ¾ per cent. per annum, which is to be used to retire outstanding Grand Trunk Railway 7 per cent. debentures, maturing on October 1. Since the end of 1934 about $117,000,000 worth of Canadian National Railway securities have been refunded. Assuming that the permanent financing of the money now borrowed temporarily to repay Grand Trunk bonds can be done at approximately current interest levels, a net annual saving of almost $2,000,000 would be effected by the Canadian National Railways.

Anglo-Scottish Railways Assessment Authority.—The report of the proceedings of the Anglo-Scottish Railways Assessment Authority for the year ended March 31, 1935, shows that for the purpose of the second valuation under the Act of 1930 the authority is now engaged in ascertaining and apportioning the average net receipts of the two Anglo-Scottish railway companies for the five years from 1930 to 1934 inclusive. With a view to the ascertainment of the Scottish proportion of the gross receipts, the railway companies have supplied figures based on a detailed investigation of receipts in certain months of 1933. In the opinion of the authority, the results of this detailed investigation, combined with the figures shown by that carried out for the year 1929,

XUM

would provide sufficient data to enable the authority to make a fair estimate of the proportion of the average gross receipts for the years 1930 to 1934 inclusive attributable to Scotland.

Water Softening Plants, L.N.E.R.—The article which appeared on page 380 of our last week's issue giving particulars of the new water softening plants on the L.N.E.R., and which concluded with a list of the locations of the plants and the names of the manufacturers supplying them, contained an error due to a misunderstanding. The plant at Scrooby (Bawtry pumping station) is being supplied by William Boby & Co. Ltd., and not by the Paterson Engineering Co. Ltd. as was stated.

Beyer-Garratt Locomotives for Iran.—In our Contracts and Tenders section we refer to an order which has just been placed by the Iranian State Railways with Beyer, Peacock & Co. Ltd., for four Beyer-Garratt locomotives. These engines, built to a 15-ton axle load, will have a tractive effort at 75 per cent. boiler pressure of 54,000 lb., the wheel arrangement being of the double Mountain type. The coupled wheel diameter will be 4 ft. 5 in. The boiler pressure will be 200 lb. per sq. in., and the firebox round topped, fitted with arch tubes and oil fired. The total weight will be approximately 204 tons. The locomotives will carry roughly 5,500 gallons of water and 7 tons of oil. The grate area will be 67 sq. ft.

Road Accidents.—The Ministry of Transport return for the week ended September 7, of persons killed or injured in road accidents is as follows. The figures in brackets are those for the corresponding period of last year :—

	Killed, including deaths resulting from previous accidents	Injured
England ...	... 120 (132)	4,255 (4,706)
Wales ...	... 8 (9)	213 (211)
Scotland ...	... 20 (19)	445 (451)
	148 (160)	4,913 (5,368)

The total fatalities for the previous week were 124, as compared with 142 for the corresponding period of last year.

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 36th Week			Totals to Date		
	1935	1934	Inc. or Dec.	1935	1934	Inc. or Dec.
L.M.S.R. (6,925¼ mls.).	£	£	£	£	£	£
Passenger-train traffic...	551,000	540,000	+ 11,000	18,020,000	17,602,000	+ 418,000
Merchandise, &c. ...	463,000	459,000	+ 4,000	15,896,000	15,827,000	+ 69,000
Coal and coke ...	231,000	229,000	+ 2,000	8,090,000	8,097,000	− 7,000
Goods-train traffic ...	694,000	688,000	+ 6,000	23,986,000	23,924,000	+ 62,000
Total receipts	1,245,000	1,228,000	+ 17,000	42,006,000	41,526,000	+ 480,000
L.N.E.R. (6,336 mls.)						
Passenger-train traffic...	349,000	358,000	− 9,000	11,704,000	11,405,000	+ 299,000
Merchandise, &c. ...	288,000	298,000	− 10,000	10,972,000	10,988,000	− 16,000
Coal and coke ...	209,000	218,000	− 9,000	7,862,000	8,070,000	− 208,000
Goods-train traffic ...	497,000	516,000	− 19,000	18,834,000	19,058,000	− 224,000
Total receipts	846,000	874,000	− 28,000	30,538,000	30,463,000	+ 75,000
G.W.R. (3,749¼ mls.)						
Passenger-train traffic...	247,000	245,000	+ 2,000	7,626,000	7,486,000	+ 140,000
Merchandise, &c. ...	179,000	187,000	− 8,000	6,425,000	6,383,000	+ 42,000
Coal and coke ...	97,000	109,000	− 12,000	3,489,000	3,539,000	− 50,000
Goods-train traffic ...	276,000	296,000	− 20,000	9,914,000	9,922,000	− 8,000
Total receipts	523,000	541,000	− 18,000	17,540,000	17,408,000	+ 132,000
S.R. (2,171 mls.)						
Passenger-train traffic...	362,000	360,000	+ 2,000	11,116,000	10,805,000	+ 311,000
Merchandise, &c. ...	57,000	62,500	− 5,500	2,176,500	2,309,500	− 133,000
Coal and coke ...	22,000	23,500	− 1,500	1,051,500	1,102,500	− 51,000
Goods-train traffic ...	79,000	86,000	− 7,000	3,228,000	3,412,000	− 184,000
Total receipts	441,000	446,000	− 5,000	14,344,000	14,217,000	+ 127,000
Liverpool Overhead ... (6½ mls.)	1,315	1,189	+ 126	43,134	41,630	+ 1,504
Mersey (4½ mls.) ...	4,062	3,948	+ 114	144,352	146,973	− 2,621
*London Passenger Transport Board ...	531,900	533,900	− 2,000	5,364,800	5,289,600	+ 75,200
IRELAND						
Belfast & C.D. pass. (80 mls.)	3,242	3,837	− 595	96,448	95,772	+ 676
,, ,, goods	451	408	+ 43	17,874	18,377	− 503
,, ,, total	3,693	4,245	− 552	114,322	114,149	+ 173
Great Northern pass. (543 mls.)	15,300	13,100	+ 2,200	391,300	371,400	+ 19,900
,, ,, goods	7,300	6,650	+ 650	323,150	307,400	+ 15,750
,, ,, total	22,600	19,750	+ 2,850	714,450	678,800	+ 35,650
Great Southern pass. (2,124 mls.)	38,351	33,801	+ 4,550	915,154	891,510	+ 23,644
,, ,, goods	34,290	34,216	+ 74	1,212,000	1,140,119	+ 71,881
,, ,, total	72,641	68,017	+ 4,624	2,127,154	2,031,629	+ 95,525

* 10th week, the receipts for which include those undertakings not absorbed by the L.P.T.B. in the corresponding period last year ; last year's figures are, however, adjusted for comparative purposes

British and Irish Railways Stocks and Shares

Stocks	Highest 1934	Lowest 1934	Prices Sept. 11, 1935	Prices Rise/Fall
G.W.R.				
Cons. Ord. ...	66½	48½	48	+1
5% Con. Prefce. ...	118	109	114½	—
5% Red.Pref.(1950)	115	107	110½	—
4% Deb.	117	105	113	—
4½% Deb. ...	119	109	117½	—
4½% Deb. ...	129½	115¼	124½	−1
5% Deb.	135	126¼	134½	−1
2½% Deb.... ...	75	64	73	—
5% Rt. Charge ...	134 7/16	123¼	132½	—
5% Cons. Guar. ...	132¾	121¾	126½	—
L.M.S.R.				
Ord.	30½	19½	18½	—
4% Prefce. (1923)	64¼	41	52	+1
4% Prefce. ...	87	69½	80	—
5% Red.Pref.(1955)	107	92½	101½	—
4% Deb.	114 1/8	100½	104	—
5% Red.Deb.(1952)	118 11/16	111¼	115½	—
4% Guar.... ...	106½	96¾	100½	−1
L.N.E.R.				
5% Pref. Ord. ...	24¾	13½	10	−¼
Def. Ord.	11½	6 7/8	5¼	−⅛
4% First Prefce....	76	59½	57	—
4% Second Prefce.	47	25½	21	—
5% Red.Pref.(1955)	94½	80	78½	—
4% First Guar. ...	104	92	97½	—
4% Second Guar.	97 7/8	86½	89	−½
3% Deb.	90	74½	79½	—
4% Deb.	114	99¼	102½	—
5% Red.Deb.(1947)	117	108	113½	—
4½% Sinking Fund Red. Deb.	111¼	105¼	110	—
SOUTHERN				
Pref. Ord.... ...	90	63 1/8	78	—
Def. Ord. ...	32 5/8	19	19	−½
5% Prefce. ...	118 3/16	107½	114½	−1
5% Red.Pref.(1964)	115¾	107½	114½	—
5% Guar. Prefce.	132	120¾	127½	−1
5% Red.Guar.Pref. (1957)	119½	113	116½	—
4% Deb.... ...	116½	103¼	112	—
5% Deb.	134	124 15/16	133½	—
4% Red. Deb. 1962–67	113 11/16	105 9/16	112½	—
BELFAST & C.D.				
Ord.	6	5	8½	—
FORTH BRIDGE				
4% Deb.	110	100	107½	—
4% Guar. ...	110	100	106½	—
G. NORTHERN (IRELAND)				
Ord.	9¾	4 15/16	15	+½
G. SOUTHERN (IRELAND)				
Ord.	25	12½	40½	−½
Prefce.	21½	13 15/16	44½	−1
Guar.	48	39	78½	+¾
Deb.	67	59	79¾	+½
L.P.T.B.				
4½% "A" ...	126	115	123½	—
5% "A" ...	135½	124½	132½	—
4½% "T.F.A." ...	113½	107½	111	—
5% "B" ...	131¾	118	127½	—
"C"	97	73	102	+2
MERSEY				
Ord.	15¼	7	11	—
4% Perp. Deb. ...	93½	82½	94½	—
3% Perp. Deb. ...	66½	61½	70½	—
3% Perp. Prefce.	54	44½	52½	—

CONTRACTS AND TENDERS

Large Order for South African Electric Stock

The South African General Electric Co. Ltd. has received the order from the South African Railways & Harbours Administration for the 72 electric motor coaches for which inquiries were recently issued. The coach bodies will be supplied by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. and the Birmingham Railway Carriage & Wagon Co. Ltd. The electrical equipment will be supplied by the General Electric Co. Ltd., of America.

Cowans Sheldon & Co. Ltd. has received an order for one 10-ton steam self-propelling crane for the Khargpur wagon shops of the Bengal–Nagpur Railway. The crane is designed to lift its maximum load of 10 tons at 20-ft. radius, and is to work on the 5 ft. 6 in. gauge.

Beyer-Garratts for Iran

Beyer, Peacock & Co. Ltd., has received an order from the Iranian State Railways for four Beyer-Garratt articulated locomotives. These engines are of exceptional size and power, being of the 4-8-2 + 2-8-4 wheel arrangement and developing 60,000 lb. tractive effort at 85 per cent. boiler pressure on a 15-ton axleload. The locomotives will each weigh over 200 tons in working order, the grate area being approximately 67 sq. ft. They will be oil fired.

Boilers for South America

The Leopoldina Railway Administration has placed orders with Robert Stephenson & Co. Ltd. for four locomotive boilers, and with the North British Locomotive Co. Ltd. for two locomotive boilers.

The Madras & Southern Mahratta Railway Administration has placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton :—

Dittmann-Neuhaus & Gabriel Bergenthal A.G.: 750 helical and 1,400 volute springs.
Fried. Krupp A.G.: 122 locomotive tyres.
Ruhrstahl A.G.: 300 carriage and wagon tyres.

The Crown Agents for the Colonies have recently placed the following orders :—

Power Samas Accounting Machines Limited: Accounting machine and accessories.
Vacuum Oil Co. Ltd.: Engine and axle oil.
Capper, Pass & Son Ltd.: Block tin.
British Insulated Cables Limited: Cable.
Paterson Engineering Co. Ltd.: Central purification and pumping plant.
Webster & Bennett Limited: Duplex boring mill.
Anderson, Grice Co. Ltd.: Electric derrick crane.
J. Stone & Co. Ltd.: Engine headlight equipment.
Texas Oil Co. Ltd.: Locomotive cylinder and valve oil.
Sentinel Waggon Works Limited: Steam railcar.
Guest, Keen & Nettlefolds Limited: Steel sleeper keys.
British (Guest, Keen, Baldwins) Iron & Steel Co. Ltd.: Steel sleepers.
Brown, Bayley's Steel Works Limited: Steel tyres.
R. White & Sons: Switches and crossings.
A. Herbert Limited: Wheel lathe.
English Steel Corporation Limited: Steel tyres.

Leyland Motors Limited has received the following orders from railway-associated road transport operators: East Kent Road Car Co. Ltd., 26 petrol-engined Tiger chassis with Still radiators and similar in essentials to the 29 Tigers ordered by this company at the beginning of the year; United Automobile Services Limited, 15 oil-engined Tiger vehicles; and Devon General Omnibus Co. Ltd., two Lion vehicles.

Wagons for India

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has received an order from the Bengal North-Western Railway for 200 four-wheeled I.R.C.A.-type MC.3 metre-gauge open cane wagons. Skoda Works has received an order for 400 pairs of wheels and axles for the foregoing wagons. These orders are to the inspection of Messrs. Rendel, Palmer and Tritton.

The General Electric Co. Ltd. has received a contract from the Southern Railway for 12 months' supply of Osram lamps.

Locomotives Required for Siam

As foreshadowed in this column in our issue of August 23, the Royal Siamese State Railways Administration is inviting tenders, receivable by the Stores Superintendent, Bangkok, Siam, by January 2, 1936, for the supply of locomotives, the numbers and types advertised as required (see our Official Notices section) being eight Mikados and two Garratts. Messrs. Sandberg are the consulting engineers from whom the necessary blank tender forms may be purchased.

Railway Plant for Iran

The Commercial Secretary to H.M. Legation at Teheran reports that the Kampsax Consortium, Teheran, is calling for tenders, to be presented in Teheran by October 15, for the supply of railway plant, consisting of locomotive and wagon turntables, weighbridges, swing gates, water cranes, pumps, &c. Firms desirous of offering plant of United Kingdom manufacture can obtain further details from the Department of Overseas Trade.

The Indian Stores Department, Simla, is calling for tenders, to be presented in Simla by October 8, for the supply and delivery of steel axles for coaching and goods stock. Firms desirous of offering steel axles of United Kingdom manufacture can obtain further details from the Department of Overseas Trade.

The Argentine State Railways Administration is calling for tenders, to be presented in Buenos Aires by October 10, for the supply of mild steel plain sheets and round, square, and flat rods, angles and sections. Firms desirous of offering sheets and rods of United Kingdom manufacture can obtain further details from the Department of Overseas Trade.

Railway and Other Reports

Barsi Light Railway.—The directors have decided to recommend at the forthcoming general meeting the payment of a final dividend on the ordinary stock of 3 per cent. actual, making, with the interim distribution in May last, a total distribution of 5 per cent. for the year to March 31, 1935.

United Steel Companies.—The directors announce that profits for the year ended June 30 show an improvement and that they will recommend the payment on October 26 of a final dividend of 4½ per cent. (making 7 per cent. for the year). The dividend for 1933-34 was 5½ per cent.

Forthcoming Events

Sept. 13 (*Fri.*).—Railway Club, at Royal Scottish Corporation Hall, Fetter Lane, London, E.C.4, 7.30 p.m. "Power-Operated Signals," by Mr. E. Wallis.
Sept. 19 (*Thurs.*)—Institution of Locomotive Engineers (London), at Inst. of Mechanical Engineers, Storey's Gate, S.W.1, 6 p.m. Opening General Meeting and Presidential Address by Mr. A. C. Carr.
Sept. 19–28.—"The Model Engineer" Exhibition, at Royal Horticultural Hall, Vincent Square, London, S.W.1.
Sept. 21 (*Sat.*).—Permanent Way Institution (Manchester-Liverpool), at Blackpool, 3 p.m. "The Permanent Way," by Mr. H. L. Douglas; "Removing a Building," by Mr. F. McCandlish.
Oct. 1 (*Tues.*).—Retired Railway Officers' Society, at Abercorn Rooms, Liverpool Street, London, E.C.2, 2.30 p.m. Ordinary Meeting.

L.M.S.R. Air Services Winter Timetable.—The L.M.S.R. announces that new schedules for its London-Glasgow air service, operated on its behalf by Railway Air Services Limited, will be brought into operation on Monday next, September 16. The northbound service will start from Croydon, airport at 9.45 a.m., instead of 3.10 p.m. as at present, and arrive at Glasgow (Renfrew Aerodrome), at 2.0 p.m., instead of 7.30 p.m. The service in the reverse direction will leave Glasgow at 9.15 a.m., instead of 8.45 a.m. and arrive at Croydon at 1.30 p.m., instead of 1.5 p.m. The Manx Airway between Manchester, Liverpool, and Blackpool and the Isle of Man, which is operated by R.A.S. on behalf of the L.M.S.R. and the Isle of Man Steam Packet Company jointly, will continue during the winter with only two flights daily in each direction (Sundays excepted) instead of six (Sundays included). Liverpool, instead of Manchester, will be the junction where connections with Birmingham, London and other centres will be made.

Hugh Smith & Co. of Glasgow.—The old-established business of Hugh Smith & Co. Ltd., hydraulic and general engineers, Possil Engine Works, Glasgow, has now been taken over by a newly-formed company under the name of Hugh Smith & Co. (Possil) Ltd. Mr. T. A. Hayward, who was a Director and General Manager of Hugh Smith & Co. Ltd., will be the Chairman and Managing Director of the new firm.

XUM

LEGAL AND OFFICIAL NOTICES

In the Court of the Railway Rates Tribunal

Road and Rail Traffic Act, 1933. Agreed Charges.

NOTICE IS HEREBY GIVEN that Applications for the approval of Agreed Charges under the provisions of Section 37 of the Road and Rail Traffic Act, 1933, short particulars of which are set out in the Schedule hereto, have been lodged with the Railway Rates Tribunal.

The said Applications may be inspected at the Office of the Tribunal, 2, Clement's Inn, Strand, London, W.C.2, at any time during office hours and at the following places:—

LONDON: Railway Clearing House, 123, Seymour Street, N.W.1.
BIRMINGHAM: District Goods Manager's Office, Snow Hill, Great Western Railway.
CARDIFF: Divisional Superintendent's Office, Great Western Railway.
EXETER: Western Divisional Superintendent's Office, Southern Railway.
LEEDS: District Goods Manager's Office, Wellington Street, London & North Eastern Railway.
LEICESTER: District Goods and Passenger Manager's Office, London Midland & Scottish Railway.
MANCHESTER: District Goods Manager's Office, Hunt's Bank, London Midland & Scottish Railway.
SOUTHAMPTON: Southern Divisional Superintendent's Office, Southampton West, Southern Railway.
YORK: Goods Manager's Office, London & North Eastern Railway.
ABERDEEN: District Goods and Passenger Manager's Office, London Midland & Scottish Railway.
EDINBURGH: District Goods and Passenger Manager's Office, Waverley Station, London & North Eastern Railway.
GLASGOW: Commercial Manager's Office, Central Station, London Midland & Scottish Railway.

A copy of each Application lodged with the Tribunal can be obtained from Mr. G. Cole Deacon, Secretary, Rates and Charges Committee, 35, Parliament Street, Westminster, London, S.W.1, price 1s., post free.

Notices of objection by any parties entitled to object to the approval of any of the said Agreed Charges must state concisely the grounds of objection and must be filed at the office of the Registrar, 2, Clement's Inn, Strand, London, W.C.2, on or before the 1st day of October, 1935, and a copy thereof on or before the same day served on or sent by registered post to Mr. G. Cole Deacon, at the above address. A separate Notice must be filed and served in respect of each Application.

Each Notice filed must be on foolscap size paper and must be stamped with an adhesive fee stamp for 2s. 6d. (which can be purchased at the office of the Tribunal only). If sent by post for filing, each Notice must be accompanied by a Postal Order for 2s. 6d. payable to the Registrar, when a stamp will be affixed at the office. A Notice by a Representative Body of Traders must contain a statement of the facts upon which such Body claims to represent a substantial number of traders interested in, or likely to be affected by the decision on, the application.

Four additional copies of each Notice must be lodged with the original at the office of the Registrar.

L. C. JACKSON,
Deputy Registrar.

6th September, 1935.

Number of Application and Date of Lodgment	Parties to Agreement	Nature of Agreed Charge
1935. No. 218—July 17, 1935	JOHN WALLACE & CO. LTD., Rowallan Creamery, Kilmarnock, and the L.M. & S. Railway Co. *Applicable also to traffic consigned by one Associated or Subsidiary Company.*	Per package. Butter.
1935. No. 220—July 31, 1935	A. NEWMAN & SON (G. NEWMAN), 27, New Road, Chippenham, Wiltshire, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos. and L.P.T.B. This application, by leave granted under Rule 4, relates also to an Agreed Charge with another Registered Bacon Curer in Great Britain as specified therein.	Per pig. Live Pigs consigned to Registered Bacon Curers or their Agents.
1935. No. 221—August 1, 1935	H.M. OFFICE OF WORKS, SUPPLIES DIVISION, King Charles Street, Whitehall, London, S.W.1, and the G.W., L. & N.E. and L.M. & S. Railway Cos.	Per ton. Furniture, General Stores and Empties returned to Suppliers.
1935. No. 222—August 1, 1935	PETER KEEVIL & SONS LTD., 370, Edgware Road, London, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos.	Per ton. Groceries, Preserves and Provisions, such as those included in Exceptional Rates Lists G, H, S and T, as defined in the General Classification of Merchandise; Confectionery, Tea; Paper for wrapping and String or Twine.
1935. No. 223—August 1, 1935	THOS. MARSHALL & SON LTD., Wellington Bridge, Leeds, and the L. & N.E. and L.M. & S. Railway Cos.	Per ton. Iron or Steel Cisterns, Cylinders, Dustbins, Incinerators, Moulder's Boxes, Tanks, Tubs, Weather Bars and Wringer Stands.
1935. No. 224—August 1, 1935	H. SAMUEL LIMITED, Hunters Road Works, Hockley, Birmingham, 19, and the G.W. and L.M. & S. Railway Cos. *Applicable also to traffic consigned by five Associated or Subsidiary Companies.*	Per ton. Clocks, Cutlery; Plated and Fancy Goods; Glassware; Empties returned to Suppliers.
1935. No. 225—August 1, 1935	WINTERINGHAM LIMITED, Stimpson Avenue, Northampton, and the L.M. & S. Railway Co.	Per ton. Toys.
1935. No. 226—August 1, 1935	ALFRED COHEN & SON, Argyle Works, 241–247, Bow Road, London, E.3, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos.	Per package. Clothing.
1935. No. 227—August 1, 1935	GRAINGER & SMITH LIMITED, Dudley, and the Cheshire Lines Committee and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos. *Applicable also to traffic consigned by four Associated or Subsidiary Companies.*	Per package. Clothing, Woollens, Linings, Drapery and Outfitting.
1935. No. 228—August 1, 1935	THE IMPERIAL TOBACCO COMPANY (of Great Britain and Ireland) LIMITED, East Street, Bedminster, Bristol, and the L. & N.E. and L.M. & S. Railway Cos.	Per package. Cigarettes and Tobacco.
1935. No. 229—August 1, 1935	EDWARD WEBB & SONS (STOURBRIDGE) LTD., Wordsley, Stourbridge, Worcestershire, and the G.W. Railway Co.	Per package. Bulbs, Plants, Seeds and Horticultural Sundries.
1935. No. 230—August 30, 1935	ERNEST WILKINSON, 177, Church Street, Blackpool, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos. and L.P.T.B.	Per pig. Live pigs consigned to the Trader or his Agent.
1935. No. 231—August 30, 1935	T. W. BEACH & SONS LTD., Evesham, and the G.W. and L.M. & S. Railway Cos.	Per ton. Preserves, such as those included in Exceptional Rate List S; Fruit Squashes.
1935. No. 232—August 30, 1935	JAMES D. BENNET LIMITED, 36–40, Tennant Street, St. Rollox, Glasgow, C.4, and the L. & N.E. and L.M. & S. Railway Cos.	Per ton. Furniture; Paint; Empties returned to Suppliers.
1935. No. 233—August 30, 1935	BRITISH HORTICULTURAL CO. LTD., Walton, Peterborough and the L.N. & E. and L.M. & S. Railway Cos.	Per ton. Bulbs, flower; Bulb Fibre; Plants and Shrubs; Seeds, agricultural and horticultural (except Seed Potatoes); Advertising Material.
1935. No. 234—August 30, 1935	HENRY BRUCE & SONS LTD., Kinleith Mill, Currie, Midlothian, and the L.M. & S. Railway Co.	Per ton. Paper, in bales, in bundles, and in rolls for printing.
1935. No. 235—August 30, 1935	J. HEPWORTH & SON LTD., Leeds, 2, and the L. & N.E. and L.M. & S. Railway Cos.	Per ton. Clothing, Hats; Empties returned to Suppliers.
1935. No. 236—August 30, 1935	MUNDUS AND J. & J. KOHN LIMITED, 50, Great Eastern Street, London, E.C.2, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos. *Applicable also to traffic consigned by one Associated or Subsidiary Company.*	Per ton. Brentwood Chairs.
1935. No. 237—August 30, 1935	JOHN NOBLE LIMITED, Brook Street, Manchester, and the Cheshire Lines Committee and the G.W., L. & N.E., and L.M. & S. Railway Cos.	Per package. Clothing, Drapery and General Stores Wares.
1935. No. 238—August 30, 1935	PANNETT & NEDEN, 206/208, Stewarts Road, London, S.W.8, and the G.W., L. & N.E., L.M. & S., and Southern Railway Cos.	Per ton. Bulbs; Seeds, agricultural and horticultural (except seed potatoes); Florist Sundries such as Raffia, Wood Pulp Trays, Wire; Herbs; Tinned Peas; Olive Oil; Sauces; Toilet and Hairdressers' Sundries.
1935. No. 239—August 30, 1935	W. H. SMITH & SON LTD., Strand House, London, W.C.2, and the L.M. & S. Railway Co.	Per package. Books and Stationery; Newspapers and periodicals published at regular intervals.
1935. No. 240—August 30, 1935	THE TAUNTON CIDER CO. LTD., Norton Fitzwarren, Somerset, and the G.W. Railway Co.	Per ton. Cider in casks and cases.
1935. No. 241—August 30, 1935	THE TAUNTON CIDER CO. LTD., Norton Fitzwarren, Somerset, and the G.W., L. & N.E., L.M. & S., and Southern Railway Cos. and L.P.T.B.	Per ton. Empties returned to the Trader.
1935. No. 242—August 30, 1935	A. WANDER LIMITED, 184, Queen's Gate, London, S.W.7, and the L.P.T.B. and L. & N.E. Railway Co. (in respect of a Railway jointly owned by them) and the G.W., and L.M. & S. Railway Cos.	Per ton. Ovaltine, Ovaltine Rusks and Chocolate, Malt Preparations, Druggists' Sundries, Advertising Matter; Empties returned to Suppliers.
1935. No. 243—August 30, 1935	JOHN C. GYNN, "Treslay," Boscastle, Cornwall, and the Southern Railway Co.	Per ton. Rabbits (dead).
1935. No. 244—August 30, 1935	THE FREEDER CREPE PAPER MILLS LIMITED, Lea Bridge Road, London, E.10, and the G.W., L. & N.E., and L.M. & S. Railway Cos.	Per ton. Paper for wrappering, Crepe Paper and articles manufactured from Paper such as Paper Serviettes and Paper Dish Covers.
1935. No. 245—August 30, 1935	THE HALFORD CYCLE CO LTD., 239, Corporation Street, Birmingham, and the G.W., and L.M. & S. Railway Cos.	Per ton. Bicycles and Accessories, Batteries and Battery Parts, Electric Fittings, Soap and Oil in small tins, and Toys.

Legal and Official Notices—*continued*

Number of Application and Date of Lodgment	Parties to Agreement	Nature of Agreed Charge
1935. No. 246—August 30, 1935	HIGHAM CAINE & CO. LTD. (HIGHCO STORES), 17, Chorlton Street, Manchester, and the Cheshire Lines Committee, and the G.W., L. & N.E., and L.M. & S. Railway Cos.	Per ton.
1935. No. 247—August 30, 1935	KIA-ORA LIMITED, 35/38, Rushworth Street, Blackfriars, London, S.E.1, and the G.W., L. & N.E., L.M. & S., and Southern Railway Cos.	Clothing, Drapery and General Stores Wares.
1935. No. 248—August 30, 1935	MARS CONFECTIONS LIMITED, Trading Estate, Slough, and the G.W. Railway Co.	Per ton.
1935. No. 249—August 30, 1935	T. ROBERTS & SONS (LEICESTER) LTD., Portland Shoe Works, Leicester, and the L. & N.E. and L.M. & S. Railway Cos.	Cordials, British Wines, Oranges, Lemons and similar Fruits.
1935. No. 250—August 30, 1935	HIGHAM CAINE & CO. LTD. (HIGHCO STORES), 17, Chorlton Street, Manchester, and the Cheshire Lines Committee and the G.W., & L. N.E. and L.M. & S. Railway Cos.	Per ton.
1935. No. 251—August 30, 1935	MINSTER CAKES LIMITED, 87A, Bordesley Green Road, Adderley Park, Birmingham, 9, and the G.W., and L.M. & S. Railway Cos.	Confectionery.
1935. No. 252—August 30, 1935	MORRIS & SON, Dale Street, Shipley, and the L. & N.E. and L.M. & S. Railway Cos.	Per ton.
1935. No. 253—August 30, 1935	"MORRIS BIG VALUE CLUB," Ashley Lane, Shipley, and the L. & N.E. and L.M. & S. Railway Cos.	Boots and Shoes.
1935. No. 254—August 30, 1935	NORTON MOTORS LIMITED, Bracebridge Street, Birmingham, 6, and the G.W. and L.M. & S. Railway Cos.	Per package
1935. No. 255—August 30, 1935	JOHN BARRAN & SONS LTD., Chorley Lane, Leeds, and the L. & N.E. and L.M. & S. Railway Cos.	Clothing, Drapery and General Stores Wares.
1935. No. 256—August 30, 1935	BRITISH STEAM SPECIALITIES LIMITED, Fleet Street, Leicester, and the L. & N.E. and L.M. & S. Railway Cos.	Per package.
1935. No. 257—August 30, 1935	THE BROOK MANUFACTURING CO. (NORTHAMPTON) LTD., Clarke Road, Northampton, and the L.M. & S. Railway Co.	Biscuits and Cake.
1935. No. 258—August 30, 1935	BROOK TAVERNER & CO., Northumberland Street, Huddersfield and the L.M. & S. Railway Co.	Per package.
1935. No. 259—August 30, 1935	BROWN & HAIGH, Wood Street Mills, Wigan, and the L. & N.E. and L.M. & S. Railway Cos.	Clothing, Drapery and General Stores Wares.
1935. No. 260—August 30, 1935	CO-OPERATIVE WHOLESALE SOCIETY LIMITED, 1, Balloon Street, Manchester, and the L.M. & S. Railway Co.	Per package.
1935. No. 261—August 30, 1935	CO-OPERATIVE WHOLESALE SOCIETY LIMITED, 1, Balloon Street, Manchester, and the L. & N.E. and L.M. & S. Railway Cos.	Clothing, Drapery and General Stores Wares.
1935. No. 262—August 30, 1935	CO-OPERATIVE WHOLESALE SOCIETY LIMITED, 1, Balloon Street, Manchester, and the L. & N.E. and L.M. & S. Railway Cos.	Per Motor Bicycle.
1935. No. 263—August 30, 1935	J. G. GRAVES LIMITED, Sheffield, and the L. & N.E. and L.M. & S. Railway Cos.	Motor Bicycles (complete)
1935. No. 264—August 30, 1935	HOVIS LIMITED, Macclesfield, and the L. & N.E. and L.M. & S. Railway Cos.	Per package.
1935. No. 265—August 30, 1935	INTERNATIONAL HARVESTER COMPANY OF GREAT BRITAIN LIMITED, Harvester House, 259, City Road, London, E.C.1, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos.	Clothing.
1935. No. 266—August 30, 1935	FRANK MANN LIMITED, Riverside Works, Shipley, and the L. & N.E. and L.M. & S. Railway Cos. *Applicable also to traffic consigned by two Associated or Subsidiary Companies.*	Per package.
1935. No. 267—August 30, 1935	JOHN MARTIN LIMITED, Commerce House, 29–55, Middlesex Street, London, E.1, and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos.	Machinery parts, such as Valves, Gauges, Pumps and Lubricators, also Fittings and Tools.
1935. No. 268—August 30, 1935	C. R. McRITCHIE & CO. LTD., Market Street, Edinburgh, and the L. & N.E. and L.M. & S. Railway Cos.	Per package.
1935. No. 269—August 30, 1935	MYERS & CO. (L. & H.) LTD., Trinity Street, Leeds, 1, and the L. & N.E. and L.M. & S. Railway Cos.	Ladies' and Children's Clothing.
1935. No. 270—August 30, 1935	JOHN MYERS & CO. LTD., Westminster Bridge Road, London, S.E., and the G.W., L. & N.E., L.M. & S. and Southern Railway Cos.	Per package.
1935. No. 271—August 30, 1935	THE SHIELDS ICE & COLD STORAGE CO. LTD., North Shields, and the L. & N.E. Railway Co.	Woollen Goods and Pattern Books.
1935. No. 272—August 30, 1935	SOMERVELL BROTHERS LIMITED, Kendal and the L.M. & S. Railway Co.	Per package.
1935. No. 273—August 30, 1935	W. WILLIAMS & SON (BREAD STREET) LTD., 53 and 54, Bread Street, London, E.C.4, and the G. W., L. & N.E., L.M. & S. and Southern Railway Cos.	Cloth and Clothing.
		Per package.
		Brassieres, Corsets, Suspender Belts and Underbelts.
		Per package.
		Hosiery.
		Per package.
		Shirts.
		Per package.
		Clothing, Drapery and General Stores Wares.
		Per package.
		Baskets, Baking Tins, Paper Bags and Advertising Matter.
		Per package.
		Small Parts of Agricultural Machinery and Motor Trucks, and Advertising Matter.
		Per package.
		Confectionery, Clothing, Drapery and General Stores Wares
		Per package.
		Mantles and Frocks.
		Per package.
		Hosiery.
		Per package.
		Clothing, Drapery and General Stores Wares.
		Per package.
		Clothing, Drapery and General Stores Wares.
		Per package.
		Preserved Food, Preserved Fruits, Cordials and Advertising Matter.
		Per package.
		Boots, Shoes and Advertising Matter.
		Per package.
		Belts, Braids, Buttons, Fancy Handkerchiefs, Feather Neckwear, Fringes, Furs, Fur Coats, Haberdashery, Knitted Sports Wear, Ladies' Hand Bags and Trimmings.

The Institute of Transport Examinations, 1936

NOTICE IS HEREBY GIVEN that the Graduateship and Associate Membership Examinations will be held in London and other centres on Thursday, Friday and Saturday, April 30th, May 1st and 2nd, 1936.

The latest date for the deposit of forms of entry which can be obtained after October 1st, 1935, is March 1st, 1936 (January 1st if any exemptions are claimed). Full particulars, previous question papers (price 1s. per set, post free) and copies of the booklet "The Institute of Transport Examinations: notes for the guidance of candidates unable to attend preparatory courses" (price 2s. 6d. post free) may be obtained from the undersigned.

By Order of the Council,
A. WINTER GRAY,
Secretary.

15, Savoy Street,
London, W.C.2.
August 26th, 1935.

Royal State Railways of Siam

SEALED Tenders for the supply of eight Mikado Locomotives and two Garratt Locomotives will be received by the Stores Superintendent, Royal State Railways, Bangkok, Siam, until 14.00 o'clock of 2nd January, 1936. Blank tender forms can be purchased from Messrs. Sandberg, of 40, Grosvenor Gardens, London, S.W.1, England, at the price of £4 and £2 per set respectively.

THE ADMINISTRATION OF THE ROYAL STATE RAILWAYS OF SIAM.

London & North Eastern Railway Company

NOTICE IS HEREBY GIVEN that, for the purpose of preparing the Warrants for Interest payable on the 15th October, 1935, on the Company's 5 per cent. Redeemable Debenture Stock, the balance will be struck as at the close of business on 26th September, and such Interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the 5 per cent. Redeemable Debenture Stock should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5.0 p.m. on 26th September.

By Order,
JAMES McLAREN,
Secretary.

Marylebone Station,
London, N.W.1.
13th September, 1935.

Bengal-Nagpur Railway Company Limited

THE Directors are prepared to receive Tenders for:—

14,500 YARDS WATERPROOF CANVAS CLOTH.

Specification and Form of Tender can be obtained at the Company's Offices, 132, Gresham House, Old Broad Street, London, E.C.2, on or after Wednesday, 11th September, 1935.

A fee of 10s. will be charged for each copy of the Specification, which is not returnable.

Tenders must be submitted not later than noon on Tuesday, 24th September, 1935.

The Directors do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,
T. R. WYNNE,
Managing Director.

University of London Commerce Degree Bureau

THE Official Institution of the University for the assistance of External Students preparing for the Commerce Degree Examinations of the University of London who are unable to attend regular College Lectures.

For prospectus apply to Secretary (Mr. H. J. Crawford, B.A.), 46, Russell Square, W.C.1.

Crown Agents for the Colonies

COLONIAL GOVERNMENT APPOINTMENTS

APPLICATIONS from qualified candidates are invited for the following post:—

LOCOMOTIVE RUNNING ASSISTANT required by the Government of the Federated Malay States for the Railway Department for four years with possible permanency. Salary $400 a month, rising by annual increments of $20 a month to $600 a month. The Government rate of exchange is now 2s. 4d. to the dollar, but the purchasing power of the dollar in Malaya is at present considerably less than that of 2s. 4d. in the United Kingdom. Free passages, and, if married, for wife and children also, not exceeding four persons. Liberal leave on full salary. Candidates, age 24 to 30, must have passed the Associate Membership examination of the Institution of Mechanical Engineers or possess an equivalent qualification, and have served an apprenticeship as a mechanical engineer in a locomotive engineer's shops or railway locomotive works. Running shed experience is essential and footplate experience is an advantage.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/3788.

XUM

Railway Share Market

Activity in the stock and share markets has been checked by the situation at Geneva, although at home everything is moving strongly in favour of increased activity in the Stock Exchange this autumn. Home railway stocks have failed to respond to the further reduction in the figures of unemployment, and there has been some discussion in the Stock Exchange as to the reason for this lack of response. The increase in employment in the coal industry and the larger output would presumably be reflected in the coal traffic receipts, and the market is mystified by the fall of £76,000 in coal receipts in the past month.

Passenger traffic receipts are contributing on balance to maintain the aggregate increase in traffic receipts to date, although Wednesday's returns were unfavourable. Detailed analysis presents so many problems to the Stock Exchange operator that he is apparently disinclined to take a chance except in the prior lien stocks, and these do not especially appeal to the speculatively inclined. Southern preferred and deferred and L. & N.E. preferred and deferred are at the lowest of the year, and Great Western ordinary and L.M.S. ordinary are within a point or two of the lowest for the last two years. A good feature was buying of London Transport "C" stock, which reached the new high record of 101½, although the best quotation was not maintained. Buying is based on dividend expectations. There was a distinct change for the better in Argentine railway stocks, and spirited bidding caused rises of from a half to three points, which is regarded as definite evidence that there is not as much stock on offer in the market as might be assumed from current low quotations.

The stimulating factor was the rise in the price of wheat, although a more permanent reason for taking a hopeful view of Argentine railway stocks is considered to be the improving exchange situation and the forthcoming reports and annual meetings. At the latter it is hoped that some statement will be made as to the negotiations which are believed in the Stock Exchange to be taking place between directors of the companies and the Government through the intermediary of Argentine bankers. B.A. Great Southern ordinary, B.A. Western ordinary, Central Argentine ordinary and B.A. Pacific ordinary are four junior stocks which have been bought this week on the long view of recovery.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1934-35	Week Ending	Traffics for Week: Total this year	Traffics for Week: Inc. or Dec. compared with 1934	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1934	Prices: Lowest 1934	Prices: Sept. 11, 1935	Yield % (See Note)
				£	£		£	£	£					
South & Central America.	Antofagasta (Chili) & Bolivia	830	8.9.35	12,110	— 4,930	36	440,120	506,830	— 66,710	Ord. Stk.	26⅜	19	19	Nil
	Argentine North Eastern	753	7.9.35	8,878	+ 995	10	81,964	79,311	+ 2,653	,,	11	6⅞	6	Nil
	Argentine Transandine	111	—	—	—	—	—	—	—	A. Deb.	52	45	48	8 5/16
	Bolivar	174	Aug., 1935	5,600	+ 300	35	50,300	49,150	+ 1,150	6 p.c. Deb.	10	6½	10	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	135¼	107/16	13	3 15/16
	Buenos Ayres & Pacific	2,806	7.9.35	71,169	+ 498	10	719,205	702,295	+ 16,910	Ord. Stk.	16½	8½	7	Nil
	Buenos Ayres Central	190	24.8.35	$117,200	— $23,700	8	$984,000	$1,057,600	— $73,600	Mt. Deb.	23	10	16	Nil
	Buenos Ayres Gt. Southern	5,085	7.9.35	120,669	+ 8,191	10	1,165,641	1,231,246	— 65,605	Ord. Stk.	35	22	20	Nil
	Buenos Ayres Western	1,930	7.9.35	43,805	+ 7,070	10	403,334	430,320	— 26,986	,,	27½	18½	15	Nil
	Central Argentine	3,700	7.9.35	106,230	— 5,933	10	1,175,750	1,293,187	— 117,437	,,	23	13½	11	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	14	7	6	Nil
	Cent. Uruguay of M. Video	273	7.9.35	8,648	— 8,907	10	82,700	166,146	— 83,446	Ord. Stk.	15½	3	4	Nil
	Do. Eastern Extn.	311	7.9.35	1,642	+ 102	10	13,393	14,280	— 887	—	—	—	—	—
	Do. Northern Extn.	185	7.9.35	884	+ 140	10	10,446	8,142	+ 2,304	—	—	—	—	—
	Do. Western Extn.	211	7.9.35	730	+ 94	10	6,994	5,956	+ 1,038	—	—	—	—	—
	Cordoba Central	1,218	7.9.35	34,290	+ 2,920	10	336,510	340,930	— 4,420	Ord. Inc.	6	3	1½	Nil
	Costa Rica	188	July, 1935	13,730	— 4,451	4	13,730	18,181	— 4,451	Stk.	30¾	23½	34	5⅞
	Dorada	70	July, 1935	13,600	+ 3,600	30	80,400	70,200	+ 10,200	1 Mt. Db.	103	95	102½	5⅞
	Entre Rios	810	7.9.35	12,777	+ 754	10	122,325	108,665	+ 13,660	Ord. Stk.	21½	12	9½	Nil
	Great Western of Brazil	1,082	7.9.35	4,800	— 1,500	36	262,300	269,500	— 7,200	Ord. Sh.	⅞	5/8	5/8	Nil
	International of Cl. Amer.	794	July, 1935	$328,485	+ $25,683	30	$2,960,671	$3,022,796	— $62,125	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	1/-	1/-	1/2	Nil
	La Guaira & Caracas	22⅝	Aug., 1935	3,855	— 75	35	31,425	29,820	+ 1,605	Stk.	12¾	7⅝	8½	Nil
	Leopoldina	1,918	7.9.35	19,360	— 5,529	36	610,403	778,623	— 168,220	Ord. Stk.	14⅝	7	3½	Nil
	Mexican	483	7.9.35	$232,900	+ $17,500	10	$2,399,300	$2,209,000	+ $190,300	,,	3¼	1½	1/2	Nil
	Midland of Uruguay	319	Aug., 1935	5,433	— 2,655	9	10,651	17,549	— 6,898	,,	1½	1/2	1½	Nil
	Nitrate	401	31.8.35	7,524	+ 3,000	35	101,134	95,065	+ 6,069	Ord. Sh.	32 9/32	51/-	2¼	Nil
	Paraguay Central	274	31.8.35	$2,371,000	+ $1,295,000	9	$16,520,000	$8,837,000	+ $7,683,000	Pr. Li. Stk.	84	67	77½	7¾
	Peruvian Corporation	1,059	Aug., 1935	74,684	+ 4,636	9	148,497	122,665	+ 25,832	Pref.	14½	8	10	Nil
	Salvador	100	31.8.35	¢10,175	+ ¢1,311	9	¢107,811	¢91,271	+ ¢16,540	Pr. Li. Db.	75	70	55	7 11/16
	San Paulo	153½	1.9.35	24,808	— 17	35	896,228	960,561	— 64,333	Ord. Stk.	86	67	42½	5⅞
	Taltal	164	Aug., 1935	2,420	— 30	9	4,945	5,078	— 133	Ord. Sh.	2⅛	1 7/16	1½	6 11/16
	United of Havana	1,365	7.9.35	15,123	— 2,209	10	178,123	175,734	+ 2,389	Ord. Stk.	6	2	2	Nil
	Uruguay Northern	73	Aug., 1935	570	— 445	9	1,182	2,071	— 889	Deb. Stk.	6¼	3	4½	Nil
Canada.	Canadian National	23,714	7.9.35	625,473	— 13,420	36	22,471,285	22,043,382	+ 427,903	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	— 4 p.c.	Prep. Dbs.	78¼	51½	55½	7 5/16
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	104½	97¼	99	4 1/16
	Canadian Pacific	17,211	7.9.35	492,000	— 58,200	36	16,211,000	16,321,800	— 110,800	Ord. Stk.	18 5/16	11 1/16	11	Nil
India.†	Assam Bengal	1,329	10.8.35	31,027	— 4,778	19	425,724	512,867	— 87,143	Ord. Stk.	88½	72	92½	3⅝
	Barsi Light	202	20.8.35	2,805	— 82	20	59,415	63,780	— 4,365	Ord. Sh.	104½	98¾	87½	6 5/16
	Bengal & North Western	2,114	20.8.35	54,308	+ 2,081	20	1,007,673	1,031,985	— 24,312	Ord. Stk.	297½	262	299½	5 5/16
	Bengal Dooars & Extension	161	10.8.35	3,692	— 985	19	44,288	50,253	— 5,965	,,	125¼	124	125½	5 9/16
	Bengal-Nagpur	3,268	31.7.35	164,700	+ 5,136	17	2,153,262	2,044,800	+ 108,462	,,	105½	96	101½	3 15/16
	Bombay, Baroda & Cl. India	3,072	31.8.35	174,450	— 9,675	21	3,251,400	3,276,150	— 24,750	,,	115	108½	113½	5 5/16
	Madras & South'n Mahratta	3,230	20.8.35	126,825	— 20,098	20	2,125,225	2,358,256	— 233,031	,,	131	122¾	121½	7 5/16
	Rohilkund & Kumaon	546	20.8.35	9,001	— 1,082	20	190,149	199,004	— 8,855	,,	263	250	292½	5½
	South India	2,526	20.8.35	98,711	— 12,620	20	1,599,781	1,640,842	— 41,061	,,	119	115	117½	6 5/16
Various.	Beira-Umtali	204	June, 1935	56,051	— 1,046	38	576,265	456,945	+ 119,320	—	—	—	—	—
	Bilbao River & Cantabrian	15	July, 1935	1,129	— 1,393	30	11,034	12,982	— 1,948	—	—	—	—	—
	Egyptian Delta	622	20.8.35	5,971	— 68	20	76,206	77,425	— 1,219	Prf. Sh.	21 5/16	15¼	15¼	5 1/16
	Great Southern of Spain	104	31.8.35	3,082	+ 629	35	62,623	73,256	— 10,633	Inc. Deb.	4	3½	3½	Nil
	Kenya & Uganda	1,625	July, 1935	180,643	+ 18,481	30	1,473,420	1,385,090	+ 88,330	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	50	33	40½	8⅝
	Mashonaland	913	June, 1935	102,039	— 7,073	38	1,047,960	840,132	+ 207,828	1 Mg. Db.	101	91¾	103½	4 15/16
	Midland of W. Australia	277	July, 1935	11,008	— 889	4	11,008	11,897	— 889	Inc. Deb.	100	93	94½	5 5/16
	Nigerian	1,905	20.7.35	21,390	+ 3,407	16	396,883	406,264	— 9,381	—	—	—	—	—
	Rhodesia	1,538	June, 1935	182,536	— 1,260	38	1,723,519	1,418,680	+ 304,839	4 p.c. Db.	104⅞	97½	104	3 15/16
	South African	13,225	17.8.35	577,466	+ 52,395	20	10,836,068	9,803,070	+ 1,032,998	—	—	—	—	—
	Victorian	4,728	May, 1935	771,592	+ 6,634	48	8,734,254	8,481,557	+ 252,697	—	—	—	—	—
	Zafra & Huelva	112	July, 1935	11,227	+ 167	30	76,472	76,861	— 389	—	—	—	—	—

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1/16

† Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend. Salvador and Paraguay Central receipts are in currency

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements from July 1 onwards are based on the current rate of exchange and not on the par value